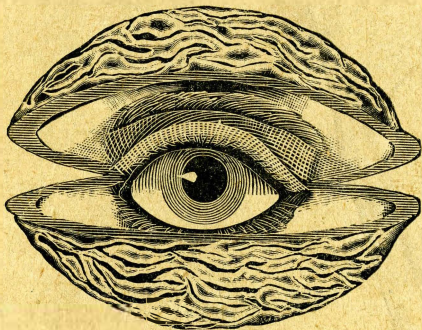
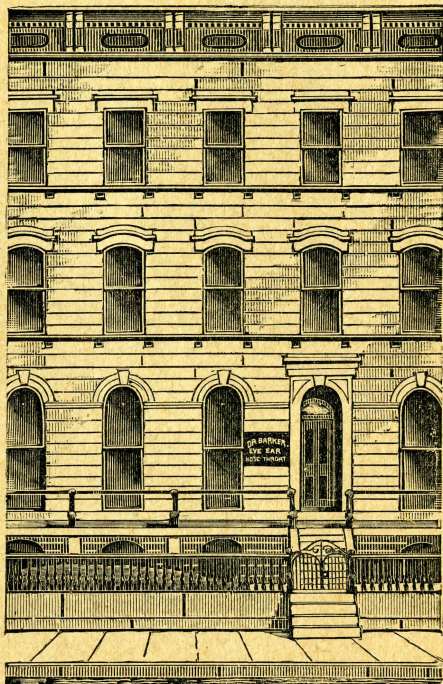


The knowledge that a man can use is the only real knowledge; the only knowledge that has life and growth in it and converts itself into practical power. The rest hangs like dust about the brain, or dries like raindrops off the stones.—FROUDE.



...THE EYE...
IN A NUTSHELL.





Dr. A. B. Barker's Residence and Institute,
No. 677 West Fourth Street,
Cincinnati, O.

THE EYE;

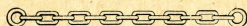
How to Preserve It,

— BY —

A. B. Barker, M. D.,

OCULIST-AURIST,

CINCINNATI, OHIO.



Entered according to act of Congress, in the year 1897, by
DR. ALBERT B. BARKER, in the office of the
Librarian, at Washington, D. C., U. S. A.

1900.



DR. A. B. BARKER,
EYE, EAR, NOSE AND THROAT SPECIALIST,
Office, Rooms H and 5, Palace Hotel Building, Bradford Block,
N. W. Cor. Sixth and Vine Sts., Cincinnati, O.

Board of Medical Registration and Examination, State of Ohio. 4922

This Certifies
That *ALBERT B. BARKER*, of
the County of Hamilton, State of Ohio,
having presented to the State Board of Med-
ical Registration and Examination satis-
factory evidence that he received the degree of M. D. from Eclectic
Medical College located in the City of New York, State of New
York, on the 1st day of March, A. D. 1883, is hereby authorized
as A GRADUATE IN MEDICINE to practice Medicine and
Surgery in the State of Ohio in accordance with and subject to the provisions of "An Act to
Regulate the Practice of Medicine in the State of Ohio," passed Feb. 27, A. D. 1896.
Given under the hands and seal of the Ohio State Board of Medical Registration and Ex-
amination, at the City of Columbus, this twenty-fifth day of May, A. D. 1896.

[SEAL.]

Recorded in the office of the Probate Court of Hamilton County, State of Ohio, this 4th day of August,
A. D. 1896.

N. R. COLEMAN, M. D., President.
FRANK WINDER, M. D., Secretary.

HOWARD FERRIS, Probate Judge.



Copy of Certificate from State Medical Board
of Ohio.

Board of Medical Registration
and Examination, State of Ohio. 3308

This Certifies

That *ALEXIS B. BARKER*, of the County of Hamilton, State of Ohio, having presented to the State Board of Medical Registration and Examination satisfactory evidence that he received the degree of M. D. from Cincinnati College of Medicine and Surgery, located in Cincinnati, Ohio, on the 22d day of March, A. D. 1892, is hereby authorized as A GRADUATE IN MEDICINE to practice Medicine and Surgery in the State of Ohio in accordance with and subject to the provisions of "An Act to Regulate the Practice of Medicine in the State of Ohio," passed Feb. 27, A. D. 1896.

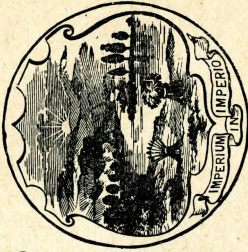
Given under the hands and seal of the Ohio State Board of Medical Registration and Examination, at the City of Columbus, this twenty-fifth day of May, A. D. 1896.

[SEAL.]

Recorded in the office of the Probate Court of Hamilton County, State of Ohio, this 7th day of August, A. D. 1896.

N. R. COLEMAN, M. D., President.
FRANK WINDER, M. D., Secretary.

HOWARD FERRIS, Probate Judge.





No. 1385

Case 1386, is that of Miss Lilian R., of Cincinnati, age 18. She was afflicted with Convergent Squint—it was congenital. Her right eye could discern bright light only, while the left eye was so weak she could read with it but a little at

a time. Both eyes were red and watery, and there was a twitching of the lids, and, to see objects before her, it was necessary to turn the head to one side.



No. 1392.

She expended large sums in high-priced spectacles of different and curiously ground lenses, and grew worse by the use of them. Dr. Barker, in a few moments, straightened her eyes. See the difference of before and after.

Case 1392, is that of Miss Addie F., of Cincinnati, aged 14, who also had Convergent Squint—the result of protracted sickness.



No. 1394.

Case 1394, is that of Mrs. Kate Eckert, of Cincinnati, aged 45.

These photographs were taken before Dr. Barker's treatment, and one week after the cure was made.

Photographed by Mr. John C. Randall, 1021 Vine St., Cincinnati.

PREFACE.

Much has been written, and given to the public, on bodily health. A good deal has been told us of the muscles of the limbs, and of the modern appliances to give them strength, agility and endurance in order to triumph in the regatta, in the vaulting and in the sprinting contests. No special attention, however, is directed to the eye—to the philosophy of seeing well; and, on this account, is the apology we offer for issuing this little book. There is no pretention of furnishing, within these limited pages, an elaborate or formal discussion of the optic science; nevertheless, they will be found to contain such facts and truths as will make interesting reading for seekers after the latest accepted discoveries of this branch of physiology, and of the improved practice of the oculist's calling.

But, more especially, for those persons who are, in any way, troubled or concerned about their own eyes, this work has been chiefly prepared. It extends to the afflicted valuable and necessary information. It illustrates the mechanism of the eye, its susceptibility to injury, and of the most approved methods of protecting and preserving the sight. All of the diseases are fully described, and every peculiarity of vision accounted for.

Spectacles are given due consideration. The composition of artificial lenses are explained, and their various forms and respective uses mentioned, together with all of that kind of useful information which those who are already wearing glasses, or those who are about commencing to wear glasses, ought to possess. Technical and scientific terms have been avoided as often as possible, while those that now and then occur will, without difficulty, be easily overcome. Illustrations and cuts, where they will help, are freely distributed, and the index will enable the reader to find the part of which there is the most interest felt at present.

A. B. BARKER, M. D.

Cincinnati, O., 1897.

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SPECTACLES.

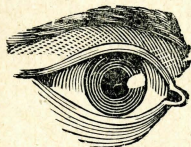
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THE EYE.

THE imperial organ of the human system is the eye. All through the Bible God eulogizes and extols it; 534 times does that book speak of the eye. A few scientific men know the wonders of this great lumin-

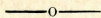


ary of the human soul; but the masses go from the cradle to the grave with but little appreciation of its peculiar adaptation and its wonderful mechanism, its delicate lenses, its wonderful screens, its soft cushions and strong chemistry. We walk over the earth and view with wonder, admiration and sur-

prise the work of Nature, Art and Science, not realizing that all the things we see are not so wonderful as the instrument with which we view them. It has 800 distinct contrivances, all self-adjustable. A disturbance of any of these deranges the whole.

Of all the endowments of the Creator, the eye is the most valuable. Without it we are deprived of all that makes life desirable; the scientist and student have no means of investigation and research; the pleasure-seeker is deprived of all the wonders and the beauties of the earth, and the toiling millions of their means of support. Upon the eye depends the influence of the orator. The eye speaks all languages, and waits for no introduction. It respects neither age nor rank, poverty nor riches, learning nor power. It converses as much as the tongue, with the advantage that the ocular dialect needs no dictionary, as it is understood the world over. If the eye says one thing and the tongue another, you will believe the former. There are asking eyes, asserting eyes, prowling eyes, and eyes full of fate, some of good and some of sinister omen. It is a positive index of character, disposition and feeling. Have you not seen it flash with indignation, kindle with enthusiasm, start with fright, leer with villainy, droop with sadness, fire with revenge,

twinkle with merriment or beam with love? None but he who has lost it appreciates its value. Sampson, with his eyes put out was weaker than the dwarf. An emperor once accidentally put out the eyes of a servant. When asked what he should pay him for the loss, the servant replied, "I want nothing but my eye." A blind man carrying a lighted torch, was asked why he carried the torch when he could not see, answered, "So that others can see me and pity my helplessness." Go to the blind asylums and ask the victims of ophthalmia the value of an eye. Then see whether you will go on guessing, stumbling and blundering in regard to its preservation, trusting spectacle venders and quacks for its treatment and protection.



HISTORY OF OCULISTS.

THE separation of ophthalmic surgery from general surgical practice has been considered of recent occurrence. It is, on the contrary, very ancient, and, perhaps, co-eval with medicine itself. Among the Egyptians, to whom we trace the origin of the Arts and Sciences, each class of diseases had its physician, and from Heroditus we learn that Cyrus sent to Amasis, the King of Egypt, for an oculist. The Greeks and the Romans had their oculists, as is evident from not only their writings, but from the inscriptions on ancient marbles and seals. That August and Tiberius were oculists, we find from the following inscriptions: "P. Aticus Atimetus Augusti Medicus et Oculis;" also, "T. Lyrius Tiberii Medicus et Ocularis." There is no doubt that oculists were at least as numerous in ancient Rome as in any modern city. The Greeks, the Romans and the Arabians were ignorant of anatomy, but good observers of nature had noticed external forms of ophthalmic disease—in many instances described them well and distinguished them accurately—but of the internal diseases of the eye they were entirely ignorant. Yet, many of the eye diseases still bear the names given them by the Greek writers. Celsus contains a summary of all that was known in his time. Some of the descriptions of the diseases and the treatment are perfectly

laughable and superstitious ; and, although he was ignorant of the seat of cataract, he has described the operation of couching excellently well. In the fifteenth, sixteenth, seventeenth and the first half the eighteenth centuries the management of diseases of the eye was left to the priests, mountebanks and itinerant practitioners. To the Germans we owe a great debt of gratitude. The anatomy of the eye began to be carefully cultivated by them about the middle of the eighteenth century, when Professors Zinn, Semmering, Arnold, Jacob, Boerhaave, Haller and others wrote and exhibited an almost perfect set of engravings, etc. The Austrians have the honor of having instituted the first public establishment exclusively devoted to the treatment of the eye. To Joseph Barth we owe the origin of the establishment, and Schmidt and Beer each published works on the eye. We see now how pure Science and its cultivation leads directly to the most wonderful and practical results. Truth is mighty, and will prevail.

In 1851 Prof. Helmholtz invented the ophthalmoscope. By this most truly wonderful instrument we are enabled to see the interior parts of the eye, the optic nerve, blood vessels, arteries, retina, lens, etc.—even to the brain—although it took many years to convince his professional brethren of the utility of this wonderful discovery. So, especially in medicine, when any new discovery is announced, or any bold innovator steps to the front with a progressive idea designed to benefit humanity and teach the healing art more thoroughly, there are always found some ready to decry the innovator as a charlatan, his process a humbug and seek to arouse public indignation or professional condemnation by talking of outrages against decency and insults to public morality. When Dr. William Harvey, of London, in 1620 announced to the world his new doctrine of the circulation of the blood, his discovery was greeted with jeers and denied by every physician of the age. When Dr. Edward Jenner discovered the vaccine virus which rendered the human system non-susceptible to smallpox, the discovery was denounced as a chimera. In 1821, when the smallpox prevailed in Boston, Dr. Boylston introduced the principle of ameliorating the disease by inoculation with cow matter, and the New England historian endeavored to

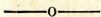
induce the physicians to co-operate with him in mitigating the violence of the pestilence. Not a bit of it! They not only refused co-operation, but publicly denounced it as introducing a plague, thus exhibiting as blind an attachment to the rules of the Faculty as Molier's apothecary, L'Amour Medicine, who said :

"For all the gold in the world I would not cure a person with any other remedies than those the faculty permitted." "I would sooner die of his remedies," he added enthusiastically, "than be cured of any other man's. For, whatever happens, we may be certain that everything is done according to rule. Better to die according to rule than to recover against rule."

Thus such men of talent as Langenbech, Hinsley, Arrette, Moss, Cohn, Barker, Jager, Donders, Von Greaf, Critchitt, Cooper, Powers, Lawrence, Stillwag, Wells, Lieberich, McKinzie and others were induced to pursue the specialty of ophthalmology, which led at once and directly to still further and most eminently practical discoveries ; such, for instance, as those of Prof. Von Greaf, the inventor of Iridectomy, or artificial pupil, linear extraction of cataract, and the most brilliant success for the cure of the greatest deformities that the human family is subject to, viz., cross-eyes or squint ; also, that of Prof. Donders on the refraction and accommodation of the eye, and hence the positive means of selecting and adapting spectacles, a boon hundreds of thousands are reaping the benefit of. Thus my readers will see that an ophthalmic surgeon cannot be a quack, and must have a scientific education and pursue his specialty with unceasing assiduity. By examining the eye with the ophthalmoscope we find out directly what glass or color is required for the patient, and can select it within the nearest fraction, in spite of anything the patient may say or do, should he be disposed to deceive us. This, you will see, is very different from the only too frequent method of venders of spectacles, letting their customers try on one after another and pick and choose for themselves. Opticians and oculists are two very different persons. The best opticians follow the directions as to focus, axis, degree, base and setting in the frames for the patient's glass chosen and tried by the oculist, just as the apothecary follows the direction of the physician

in compounding medicine prescribed. These eminent specialists have done more for the human family than all the rest of mankind.

The oculist who has the pleasure of saving for his patient even a fraction of sight, gives sufficient evidence of his masterly skill, and should be honored during his life. The person who submits his eyes to be treated by those who profess to treat and cure all the diseases that human flesh is heir to, deserves, and does many times, pay a dear penalty for it by the partial or total loss of sight.



ADVANTAGES OF SPECIALISTS.

THE advantage of this arrangement is obvious. Medical science offers a vast field for investigation, and the physician cannot, within the brief limits of a lifetime, achieve the highest degree of success in the treatment of every malady incident to humanity. A distinguished professor in the medical department of one of our universities, in an address to the graduating class, recently, said :

“Some professional men seem to be ashamed unless they have the reputation of universal knowledge.” He who falls into the error of studying everything will be certain to know nothing well. The field of Medicine and Surgery is too large to be cultivated in its entirety by one individual. Hence the advantage of cultivating special studies. It is impossible to know everything ; something must be wisely left unknown. Indeed, a physician, if he would know anything well, must be content to be profoundly ignorant of many things. He must select something for special study, and pursue it with devotion and diligence. This course will lead to success, while the attempt to do everything eventuates unavoidably in failure.

Prof. Virchow says : “No man is able to embrace the immense details of Medical Science ; it is too vast to be comprehended by any one mind ; and, unless *Specialties* are studied and practiced, the poor, unfortunate sufferers must continue the victims of an ignorant prejudice, and suffer on, until death closes the scene.”

THE EYE—HOW TO PRESERVE IT,

With the Egyptians, to whom we trace the origin of the art and science of medicine, each class of diseases had its physician. The Greeks, Romans and Arabians had specialists for each specific disease. Who discovered and invented steam, electricity, printing type, etc.? Not the jack of all trades and master of none, but he who applied his entire energy and brains and time to one thing, and mastered it successfully. Who invented the ophthalmoscope—that wonderful instrument to look through and through your eyes? the microscope? telescope? the otoscope, to look through the ear? the laryngoscope, to look into the throat? and many other useful and wonderful instruments? Not he who thinks to know all things, and anything he does not know is not worth knowing. No, no; he who learned one thing, and practiced one thing, he it is who has done so much for the human race, and ought to be praised. Who discovered all the eye and ear diseases with their successful treatment? Not the physician who claims to cure all and every disease the human family is heir to. No, no; but he who has devoted his entire energies to this special branch. It is the same with other branches of medicine and surgery, viz., obstetrics, chemistry, materia medica, therapeutics, etc. You may ask any general physician in what case he is most successful, and he will tell you, either in fevers or pneumonia, or pleurisy; others excel in skin diseases, etc. Why are they more successful in some diseases than others? Because they have applied their attention and practice to these diseases.* Hence they meet with greater success because they have acquired greater skill in one special disease.* Yet they will claim to cure all diseases incident to humanity. The reason is obvious. 1st, The people know no better. 2d, It is an ignorant habit. 3d, The physician fears that he will not make money fast enough, if he treats special diseases only. And in this lies all. Hence they call specialists humbugs. The time is coming when there ought to be, and will be, a physician for every disease, and there will be no more malpractice nor needless suffering.

* Lawyers, merchants and mechanics, who are successful in their vocations, divide their labor into specialties.

SPECTACLES.

How and Where, and From What Made and Sold.

THE material principally employed for spectacles and optical lenses is plate glass of the purest quality. It requires the nicest adjustment as to the proportions of its ingredients, viz., white sand, salt, carbonate of lime, peroxide of manganese smalt; oxide of cobalt for blue and other coloring matter for colored glass. The presence of too much alkali attracts humidity from the atmosphere and causes the glasses to become dull, like frost on the window-pane.

The French plate glass, in point of color, is superior to the British, but has the disadvantages of softness, fragility and a tendency to become dull and defaced; therefore, although it is preferred by some, the glass known as "British plate" is, on the whole, the best.

Lenses are also made from natural rock-crystal, called pebbles, which always retain their transparency, their greater hardness than glass, and are, therefore not so liable to become scratched in use. The refractive power of the pebble is also greater than glass, so that for equal lengths the convexity or concavity of a pebble lens is less than that of a glass one, and, on this account, as well as from the greater strength of the material, the pebble lens can be made comparatively thin and light. A pebble lens can be readily distinguished from a glass one by its greater coldness to the tongue and its hardness to grind on a stone—pebble being a better conductor than glass; hence the lens can be used longer by artificial light without heating the eyes. Also, by placing it between two plates of tourmaline and holding it up to the light, with the glass no effect is produced, while with

THE EYE—HOW TO PRESERVE IT,

the pebble lens the light is polarized, and yellow color becomes visible. Its extreme hardness renders it difficult to scratch or break, and its clearness never becomes dull from moisture. The pebble lens, however, has the disadvantage of being comparatively expensive, partly on account of the additional labor in cutting into sections, grinding and polishing them, and partly from the number of imperfect ones found in their cutting and manufacture, whereby the price of good spectacles is enhanced.

Place a pebble lens on a white paper, and the paper will not change its whiteness, while glass will make the paper yellowish or a shade darker. Hence, anyone can see why glasses not properly adapted, and not of the right kind, are injurious to the eye. As spectacles are essential to the proper exercise and preservation of vision by a large proportion of the inhabitants of civilized countries; and this being so, they should be treated as carefully and as scientifically as the eyes themselves; hence their price should not deter anyone from obtaining the very best that art and science can produce. Those who most neglect are generally the least ready to replace them, and are often seen struggling with type or with needlework, through the obscuring media of scratched or dirty lenses, and suffering therefrom according to their deserts.

It is, perhaps, hardly necessary to say that the spectacles which are advertised under various ill-sounding names, such as "Diamonds," "Crystals," "Mazarine Blue," "Eye Restorers," "Medicated," "Parabolas," "Bifocal," "Australian," etc., as possessing special characteristics, have, in reality, no special value whatever, and are only to be regarded as the basest endeavors on the part of designing persons to prey upon the credulity of the ignorant.

Spectacles are mostly made in France and England. A piece of glass or rock-crystal of a thickness proportionate to the convexity or concavity of the intended lens, is cut into squares 2x2 inches. After these squares have had their corners snapped off, they are fixed with cement to a metal tool, the concavity or convexity of which corresponds to the curve they are intended to receive. They are then worked by hand or machinery on the smoothing-tool, which latter must be perfectly true—a radius in accordance with the focal lengths of the intended lenses.

They are worked with a peculiar kind of eccentric motion, which is found to give equal friction to all parts of the surface. After the lenses have been thus gradually rounded into shape and smoothed by emery powder of different degrees of fineness, they are subsequently polished with oxide of tin, which is laid on a polisher made of felt and cement and formed to the curve of the smoothing-tool. When one side of the lens is completed, the other side is subjected to a like process. (See cut of lenses.)

In China, rock-crystal is used throughout the empire for spectacles. They are ground with the powder corundum and set in large circular frames, and are retained in position by silken cords with weights attached, which are slung over the wearers' ears.

Two glasses are ground at one time, in order to make the curvature and axis of both true. If the lens is not accurate, the slightest variation from the true axis and curvature will interfere with refraction and the perfect definition of the image, or double or distorted images will be produced; hence confusion, dizziness, headache, neuralgia, squinting, glaucoma and cataract is the result.

The glasses are then assorted and marked, and sold to importers, and they, in turn, sell to minor dealers, and the dealers sell to jewelers and spectacle venders, and these jewelers and venders claim that they are opticians and spectacle makers. All their work consists of is to sell the ready-made spectacles to suit purchasers, just as the merchant sells ready-made shoes and clothing. These spectacle venders even claim that they are oculists, manufacturers, opticians, etc. Before they are sold to the importers, the glasses are assorted according to quality and focuses. They usually run from 5 to 160 inches, and from $\frac{1}{4}$ to $4\frac{3}{4}$ inches, which are termed cataract lenses. The English measurement is different from the French and German, but the glasses ground for oculists' use are focused by dioptries and metres, and great care is taken to make them true and perfect; hence they are more valuable than usual clap-trap work, which are made to sell for some price or another.

A still cheaper glass is made from crown and flint, pressed by models (like clay pipes or bricks), and kept for sale everywhere, peddled about through the country and palmed off for stone, crystal or pebbles. They are val-

useless and injurious, and no one should use them, if they value or desire to preserve their eyes, as these alleged spectacles have no radius or axis, but simply draw heat and magnify, and thousands of eyes are yearly lost by their use. The frames are made by another manufactory, and are of various shapes, sizes and quality. This invention is brought to perfection. The earliest mention of artificial aids to sight occurs in the writings of Roger Bacon, who speaks of an instrument useful to old and weak eyes.

Mons. Spoon, in his "*Recherches Curieuses*," fixes the date of the invention of spectacles between 1280 and 1311, and a monument erected to Sulyian Amatus is thus inscribed: "To the Inventor of Spectacles."



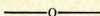
SUITABLE GLASSES.

STRONG and light glasses is the main point to be desired, and that they remain in their proper place. To prevent each lens from corresponding with the axis and focus of the natural lens within the eye-ball, would neutralize the curvature, the convexity or the concavity of the eye, or injuriously add to or deduct something from it. Rimless glasses, owing to their thickness, are heavy, easily broken, and their attachments are apt to become loosened, and so destroy the relation that ought to exist between the natural and artificial lens. Besides, the edges of these glasses being unprotected, the rays of light pass through the naked edges, forming prisms, which strain the eye and cause confusion, squinting and headache, etc.

The size and shape of glasses are governed, in a measure, by fashion or the taste of the wearer, and by anatomical construction of the shape, size and form of the nose and head. Glasses have the same effect on the appearance as other articles of dress or ornament. Spectacles that would be becoming on one person would not look well on another—they should conform to the brows, to the nose and to the whole face. In every detail—size and shape of lenses and kind of frame of these necessary aids to sight—should blend harmoniously with the features,

and prove a comfort rather than an inconvenience and injury to their possessors. Bifocal (two pieces in one lens), for various reasons, are detrimental to sight.

Should any of our readers feel like beginning the use of glasses, or, if already wearing them, desire to make a change, or have trouble with their eyes, either from injury, disease or natural cause, we invite them to come and consult us. We ask them to receive the advice of an Oculist-physician who, for thirty years, has made a specialty of this delicate organ, and who has treated and cured thousands upon thousands of the afflicted, including every defect to which the eye is subject, some by operation, some by medical remedies, and, in cases where spectacles would be decided upon to produce the desired relief, only such have been recommended and furnished as we could guarantee to restore the vision and permanently preserve the eye.



WHY SO MANY USE GLASSES.

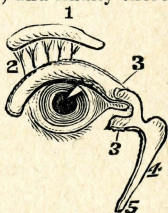
THE question is frequently asked, "Why do so many people wear glasses?" The answer is easily given. Within the last ten years a great deal has been learned about the value of glasses and their various uses. The people, too, are better acquainted with eye peculiarities, and the best way to correct and preserve them. Perhaps the eyes need more help now than formerly. The sewing machine and other inventions of its class saves the labor of the hands, only to add to that required of the eyes. New employments and new fashions are being continually introduced which increase the exactions laid upon these delicate and sensitive organs. The steady decrease of illiteracy, together with the general cheapening of literature and the spread of a taste for it, the enormous circulation of the daily newspaper, the increasing use of artificial and electric light, extending the hours of eye-work, all combine to overtax the eye and to render it an organ most liable to give way under these adverse drafts upon it in the daily or nightly struggle for existence.

Therefore, these aids, which protect, preserve and strengthen, have become of universally recognized importance.

WATERY EYES.

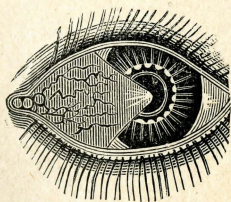
This is an annoying trouble, attended with disfigurement of the countenance, and not unfrequently with granulated lids and ulcers. The lids are drawn down, and the lashes, adhering to their edges, become misplaced, inflammation ensues, the eyes themselves are affected, and finally there is a serious disturbance of the vision.

The tears pass from gland 1 (see fig.) through the little canals, 2, to the inner angle of the lids, 3; thence to a sac at the root of the nose, 4, and from there to the canal, 5, to the nostril. Any interruption of this process will cause the tears to escape from between the lids, and run over the cheeks, while the stoppage or collection of the tears, in the tear sac, at the root of the nose, will cause irritation and start an abscess which, if not checked, will develop and burst on the cheek, near the eye, terminating, probably, in a fistula, through which the tears will constantly flow.



It is of the utmost importance that remedies for this troublesome ailment should not be delayed. It yields more readily in the early stages of its appearance than after it has run its course. Its treatment should be entrusted only to an Oculist Surgeon whose experience and skill and success give assurance of favorable results. Sometimes a nice operation upon the lachrymal gland is required.

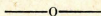
PTERYGIUM.



THE accompanying engraving represents a web eye, or a wing. It is a varicose excrescence of the conjunctiva. It commences generally at the inner corner of the eye, gradually advances toward the center, and finally covers the cornea and pupil, which causes blindness. It occurs most frequently (but not always) in persons exposed to the sun,

such as farmers, sailors, blacksmiths and firemen. It is also produced from injuries, granular lids, nasal catarrh, etc., or it may arise without any apparent cause. It is first discovered as a slight thickening of the membrane covering the eye-ball, between the sight (pupil) and the corner of the eye, and usually covers the eye. Wind, dust, smoke, etc., will cause the parts to become inflamed, red and swollen, giving a dissipated appearance.

EARLY TREATMENT.—We have faith in the efficacy of medicinal treatment intelligently administered, and are not in harmony with those who discard therapeutics or wait until it is often too late for medicine to be effective. Early treatment is imperatively demanded in all eye, ear, nose or throat disorders. The growth can be checked by mild treatment, if taken in time. When surgical interference is required, the sooner it is removed the slighter the operation. See record of cases cured, pp. 56-57.



PERFECT SIGHT.

GOD, in His infinite wisdom, has provided for us two eyes, which are absolutely necessary for right comprehension, by light, of size, form and distance. No correct conception can be obtained by one eye alone. The field of vision is such that each eye watches for each side of the body; each eye is but half of the other. In order to have perfect vision, we must possess binocular sight; the two eyes must work in unison; besides, our countenance would be greatly marred if we had only one eye.

Of the five special senses the eye and ear may be reckoned as the most essential, while the eye is considered the most intricate of all the organs. The act of seeing, or the effect of light upon the retina, is almost beyond comprehension. The diameter of the eye is less than an inch. Yet, as we look over an extended landscape, every feature, with all its variety of shades and colors, is repeated in miniature on the retina. Millions of ether waves converging from every direction, break on that tiny beach, while we are oblivious to the marvelous nature of the act. Where

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is the artist who can produce such marvelous painting, with all its beauty, on such a small space—an inch? Yet in it the physicist sees a new illustration of simplicity and perfection of the laws and methods of the Divine Workman, and a continued reminder of His forethought and skill. The eye is a perfect photographer's camera. The retina, R, is the dry plate upon which are focused all objects by means of the crystalline lens, L. The cavity behind this lens, V, filled with the vitreous humor, is the camera. The iris and pupil, P, are the diaphragm. The eyelids are the drop-shutters. The draping of the optical dark-room is the black membrane ciliary process. This miniature camera is self-focusing by the action of the ciliary muscle on the lens, self-loading and self-developing, and takes millions of pictures every day in color, and enlarges to life size.

Yet its simplicity of structure makes its investigation possible; even a superficial knowledge, which any one may acquire, will materially assist in its protection and preservation, and when anything goes wrong with it, will apply to none but an experienced oculist-physician for counsel and remedy. New diseases are constantly occurring bearing such close resemblance to something that has preceded them, that it requires skill and long and successful practice to decide whether local or constitutional treatment will produce the desired relief. The application of eye water, eye salve and other specifics, by the ignorant, is a pernicious evil, and it loses the time and opportunity for recovery which could only have been effected by remedying some trouble of the heart, the blood or the kidneys.

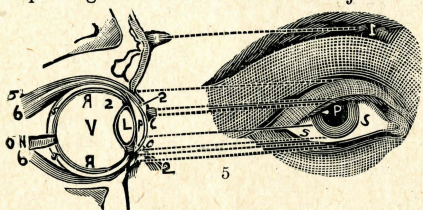
All the tissues of the body are represented in the eye. Of the twelve cranial nerves, four are designed especially for the eye. It is so closely and intimately connected with not only the brain, but the entire nervous system, that its maltreatment or impairment causes the loss of sight and leads to serious nervous affections.

To give a full description of the functions and diseases of the eye would require many volumes. What we wish to speak of are the troubles and their causes and cures of most frequent occurrence, and how, when other treatment is unnecessary, glasses can be made to produce the desired relief.

A double convex lens covering a hole in the shutter of a

darkened room will cause a picture of objects outside of the shutter to be distinctly formed on a screen placed at the focal distance of the lens within the darkened room, providing the outside objects are twenty feet or more distant from the lens. The rays of light coming from the objects which form the picture may be considered parallel rays.

If the objects are brought closer to the lens on the outside of the window, the screen in the darkened room must be removed further from the lens before a clear picture will be formed. The rays which pass from any point of an object so located, and fall on the lens in the shutter, are called divergent rays. All objects nearer to the eye than twenty feet give off divergent rays of light. The photographer puts his head under a dark cloth and moves the ground glass screen backward and forward until the image is very distinct. That operation is called focussing or adjusting. The eye is very much like a camera; but focussing the lens the screen does not move; on the contrary, the curve of the lens is changed to suit the distance of the object looked at. The same thing is done by means of the ciliary muscles, which makes it more convex for near objects, less convex for distant ones. This we term accommodation. In youth the crystalline lens of the eye is soft, and clear, and will readily change its curve; but from age or other cause the lens becomes harder or clouded, and it requires greater effort to see near objects.



The eye figure 5— the chamber behind the iris, 2 V — is a dark room, the cornea, C C, aqueous humor, crystalline lens, L,

and V, vitreous humor, together act as a double convex lens, and the retina, R N, is the screen on which the picture of external objects are formed; 6 6 are the inner and outer muscles, O N the optic nerve, P pupil, S S white of the sclera.

The optical or seeing and the muscular arrangement of

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the different parts of a perfect eye are such that, when the attention is directed to an object twenty or more feet distant from the observer, a perfect picture of such object is formed on the retina, N R, and distinct vision is the result, and all muscles of the eye are at rest, and, while so, an object such as printing could not be distinguished if held at from twelve to fifteen inches from the eye. This function (termed by oculists accommodation) is exercised instantly upon the attention being directed to small objects near at hand. It is simply the contracting of the ciliary muscle which surrounds the circumference of the lens, L. The effect of this contraction is to cause the lens to assume a more convex form, and consequently the combined action of the aqueous humor, crystalline lens and vitreous humor is increased in power, and these divergent rays of light are made to form a distinct picture on the retina, R N. The internal muscles of the eyes (6) turn the balls inward towards the nose instantly for near vision; then the retina, R N, in each eye receives, at the same moment, a similar impression of the object, and thus the convergent muscles and the muscles of accommodation act simultaneously for clear vision of near objects. The external muscle (5) draws the two eyes for far objects. The perfect eye, with good daylight, can read the following large type at a distance of twenty feet from the eye, viz:

BARKER

Place this book twenty feet distant. See if the name Barker is clear and distinct. Try each eye separately. If any letter is indistinct, your eyes are defective.

And with the same eye at thirty-five years of age should be able to read the following small type at fourteen inches and up to six inches from the eyes with either eye; at an earlier age still nearer than six inches without blurring the eye, viz:

A. B. BARKER, OCULIST AND AURIST, CINCINNATI, OHIO.

"Persons having normal vision will be able to read this print at a distance of 14 inches from their eyes with ease and comfort; also, will be able to read it with each eye separately. If unable to do so, your eyes are defective, and should have immediate attention. When the eyes become tired from reading or sewing, or if the letters look blurred and run together, it is a sure indication that glasses are needed. The lenses sold in the cheap goods are of unequal density, and have imperfectly formed surfaces. Continued use of these poorer lenses will result in positive injury from the constant strain upon the muscles of accommodation to supply the defects in the glass."

When the eyes tire or ache, or require bright light, it is a warning that glasses are needed, and it is better to consult an oculist who makes a specialty of the eye, and is familiar with all of its peculiarities, than to trust your precious sight to the unskilled mere dealers in drugs or in jewelry, or to those who offer the inducements of a special bargain counter. Such glasses are often of unequal density, curved improperly, mounted out of center, and badly polished. They may have the virtue of magnifying, but are liable, eventually, to weaken, and, maybe, ruin the eyes. Get such as will help, and not harm you.

—O—

SPECTACLES.

Their Uses and Abuses; Who Should Wear Them, and by Whom They Should be Adjusted.

THE celebrated English oculist, Prof. Wells, in his work on diseases of the eye, makes the following pertinent remarks:

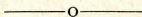
"The proper choice of spectacles is, indeed, a science in itself, and of great importance to the public. I have no hesitation in saying the empirical, haphazard plan of selecting them, generally employed by those who sell spectacles, is but too often attended by the worst consequences—the eyes, in fact, ruined, which, with scientific and skillful treatment, by the use of peculiar spectacles, selected and adjusted by an oculist, would have been preserved for years."

We agree with this eminent authority—for, from our thirty years' experience in treating diseases and malformations, we had become convinced that a large per cent. of eye troubles could have their origin traced to the use of imperfectly adjusted glasses.

There are a variety of circumstances governing the oculist in selecting glasses for his patient, which cannot be neglected. He has to take into consideration any acuteness of vision, any disturbance of accommodation from whatever

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er cause, the nature of work, whether it is day or night, whether both eyes are equal in focus, whether the pupils are of the same size, whether the cornea is equal in all the meridians, whether the muscles are equal in length and strength, whether the eyes set in the same axis, whether the eyes move together, whether the eyes set inward or outward, downward or upward, whether the eyes are bulging or deep seated, whether a large person with long neck and arms, or a small person with short neck and arms, whether a narrow or broad forehead, the shape of the nose—whether high, Roman, flat, etc., whether the patient should wear springs or spectacle frames, of what material, size and shape of glass should be, etc. The neglect of any of these is liable to produce a serious disturbance of vision.



IMPROPER OR NON USE OF SPECTACLES.

WHAT we say under this head is for the purpose of calling the attention of the intelligent and investigating public to this important and much neglected subject. We shall use our utmost endeavors, by every fair and honorable means, to induce those who need spectacles, from any cause whatever, to call upon us, learn our advantages, and see the evidence of our success, believing you will decide, as thousands of others have sensibly decided before you, that our numerous advantages are absolutely unsurpassed, our success unequalled, and that an opportunity so favorable to secure, for one price, the service of both a skilled oculist and optician, has never

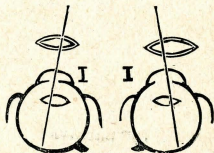


Fig. A shows the effect on the eyes of the use of decentered spectacles. If the glasses are mounted in narrow frames, the internal rectus muscles will naturally draw the eyeball inward, or upward or downward, and produce great strain headache, etc.

before been offered. After you fully investigate this subject, if you find our statements are correct, and you have confidence in our skill and ability, we will be most happy to serve you professionally, and furnish all the artificial aid within the reach of human skill. If you do not see fit to patronize us, we shall be none the less zealous in promulgating the truth, urging you not to trust the quack, charlatan, peddler, or other spectacle vender, who knows nothing of the mechanism or malformations of the eye, but to go to some reputable oculist for advice and assistance.

We unhesitatingly assert, and will be corroborated by every reputable oculist in the land, as well as by the best eye authorities in print, that the wrong or non use of glasses produces not only more than one-half of all eye diseases, but is also productive of the most serious nervous disturbances. It produces squinting, cataract, amaurosis, irritation, detachment or rupture of the retina, engorgement, or lack of nutrition of the blood-vessels. granular or red and swollen lids, wild hairs, weeping eyes, ulcerated cornea, paralysis of the lids, loss of co-ordination or double vision, hemiopia or half-sight, inflammation of the nerves, specks floating before the eyes, obscure vision, neuralgia, headache, dizziness, hysteria, depressed spirits, etc., etc., besides interfering with the circulation and nutrition of the blood; this in turn produces the most serious nerve and brain afflictions, thereby not only entailing loss of sight, but untold misery, and often premature graves.

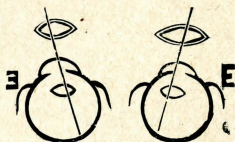


Fig. B shows the effect of glasses mounted in frames too wide, causing external muscles, E. to draw the eyeball outward, producing great strain, fatigue, squinting, neuralgia, headache, red eyes, nervousness, dizziness, etc.

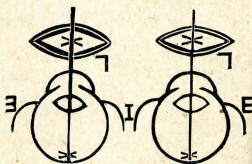


Fig. C. Each eye is looking through a proper and exactly centered lens, mounted in the exact size and shape of frame and nose-piece. The axis of each lens is made to correspond to the axis of vision. Hence, the eyes can be used with ease and comfort, by day or night, as the eyes are always in a state of rest.

ADVANTAGES IN PATRONIZING US.

1. Our stock and appliances surpass anything of the kind kept in the United States.

2. Our terms are so reasonable that they are within the reach of all.

3. You can have glasses set in any desired frame, gold, silver, steel, rubber or shell, of the very best quality.

4. We give with every pair of spectacles which we prescribe, a written guarantee to be as represented.

5. If desired, new spectacles will be exchanged for old ones. New glasses will be fitted to old frames, and such other changes made as may be required.

6. By patronizing us you procure for one price the services of both the skilled oculist and optician, and run no risk whatever of not being suited, or of having your sight injured.

7. We believe we have fitted more glasses within the last 25 years than any 5 oculists in the United States, always doing the optician's work ourselves, or having it done under our immediate supervision.

8. Having once examined an eye, we keep the record, and can furnish duplicates of any part at any time, by mail, without charge, except for the part supplied.

9. We furnish you the glasses at once, while other oculists will give you a prescription to be sent to the optician. This often results in annoyance, for frequently changes have to be made. The slightest deviation in setting, renders them unsuitable and injurious to the eyes.

10. These lenses are all made for our special practice, the greater part coming to us in the rough. We examine your eyes, test your vision, measure your nose and forehead, and give a perfect fit in shape of nose-piece, length of bow, width of frame, size of orbit, as well as the correct adjustment of the curvature, axis and power of the lense making it an ornament to the face.

From our long practice, we have found the adjusting of a proper glass to an abnormal eye to be a more intricate undertaking than the extracting of an eye, or removal of a cataract, or straightening of a cross-eye; hence we have given it unusual study, and we do think, without bombast, or egotism, that in this line of practice we excel all others.

BRITISH CRYSTALS.

REALIZING the fact that, to keep pace with the advancement of science, a better lense must be used than is commonly found, after these many years of watchfulness and experimenting, we have perfected and adopted the justly celebrated British crystals, which we feel are supplying a long-felt need. Among their many points of excellence the following will be found most prominent:

1. Their high degree of polish and transparency are so great, that their use creates no feeling of fatigue.

2. They absorb all prismatic colors, hence, do not create dizziness, squinting, headaches, etc.

3. They admit only the white rays, hence, objects are seen in their natural color and position.

4. They reflect cholorific rays, thus keeping the eye cool, and enabling it to work any length of time.

5. They are of greater density, therefore can be made very light, yet strong, and are not so liable to become scratched or otherwise defaced.

6. They are cheaper than other glasses, for when once properly selected and adjusted, they can be used for years without change.

7. They exclude all chemical rays, admitting none but luminous rays, thus allowing the eye to work indefinitely on black, without fatigue.

8. Their index of refractions is greater, giving them a high degree of brilliancy, necessitating less light, thus enabling the eye to work as well by night as by day.

9. They have no bubbles or flaws, so often found in other glasses, but permit the rays to pass uninterruptedly, while the eye remains at perfect rest.

10. Their optical centers and curvatures are ground with the greatest mathematical precision, thus admitting the rays of light, without any strain whatever, upon the eye.

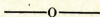
IN CONCLUSION: *They present more points of efficiency, durability, and superiority than any other spectacles made.*

Charles II, King of England, was born a myopic and astigmatic. The best skill was secured to help his erratic vision. Weeks, months were required, hundreds of lenses were especially ground, and tried before the exact and certain help was obtained, and yet these self-styled Opticians will fit out for a similar trouble in a few minutes.

EVIDENCE OF FAILING VISION.

1. Spots or sparks of light floating before the eyes.
2. Quivering of the lids or sensation of sand in the eye.
3. Perceptible fatigue or the requirement of strong light in reading.
4. The holding of objects at arm's length or close to the eye.
5. Squinting one eye, or seeing objects double.
6. Dizziness or darting pains in the eyeballs or over the temple.
7. Perceiving a colored circle around the light.
8. Sensitiveness of the eyeballs or contraction of the visual field.
9. Blurring of the vision or being unable to see objects distinctly at a distance.
10. Watering, or redness of the eyes or lids, running together of the letters when reading, or seeing the vertical better than the horizontal lines.

If you have any or all of the above symptoms, *beware!* they are monitors, telling you of approaching danger, and admonishing you to consult an oculist at once; you evidently are needing glasses, or the ones you are using are unsuited to your eyes.



Spectacles for Old Sight (Presbyopia).

SPECTACLES are used to collect, refract, absorb, soften or otherwise modify the light. As their use is essential in the proper exercise and preservation of vision, they should be treated as scientifically as the eye itself. Failure of vision from age is not caused, as is erroneously supposed by many, by the flattening or sinking of the eyeball, but by the loss of the accommodating power of the lens, L.

By the accommodating power, we mean the adjusting of the crystalline lens by the ciliary muscle to the distance of the object looked upon. To illustrate, when looking at a distant object the ciliary muscle contracts, causing the

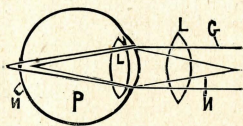


Fig. P. (old sight). G shows rays cannot be focused on the retina. L, the correcting glass, brings the rays to a point N, thus forming perfect vision on it.

crystalline lens to alter shape and become thinner; the further the object the thinner it becomes. On the other hand, in looking at near objects, like reading, sewing, etc., the ciliary muscle relaxes, causing the crystalline lens to thicken. This changing of shape of the crystalline lens by the ciliary muscle, enabling the eye to focus objects at different distances, is termed accommodation.

There are a variety of causes impairing the elasticity of the lens and muscles, which, producing failure of vision, dating from youth to old age, among most prominent may be mentioned: the improper use of the eyes during school days, reading bad print, inadequate light, bending over desks or pianos, reading in a recumbent position, school furniture not being adapted to the height of the pupil, causing them to bend the head forward, thereby hindering the return of the blood from the eyes, holding print so near as to greatly task the power of the ciliary muscle. Again, sickness, injuries, sore eyes badly treated, sewing by artificial light, reading under a tree or in the cars, learning trades, reading during confinement, all have a tendency to weaken the ciliary muscle, preventing the crystalline lens from adapting itself to different distances, thus causing the eyes to become fatigued.

You can hold out at arm's length a half-pound weight without fatigue for a certain length of time, but beyond a certain length of time it is impossible. Exactly the same with the use of the eyes. In reading, for instance, the muscular effort of accommodation is exercised almost without sensation, till pushed beyond its power, when the ciliary muscle suddenly ceases to act, and the lens to be changed in shape, the consequence of which is that the letters run together or are blurred, because the picture on the retina is not sharply defined; in other words, out of focus. The muscular effort, then, to adjust our eyes, is accompanied with fatigue, and if pushed further, with pain, and still further, with the loss of sight.

These defects are remedied by a peculiarly constructed glass, which, when properly adjusted to the axis of the lens, adds to or takes from its thickness, as its deficiency may require, and thus the eye is mechanically made normal. The neutralizing of a proper lens is a delicate undertaking, which should be attempted only by a competent oculist.

SPECTACLES FOR NEAR-SIGHT (OR MYOPIA).

MYOPIA, from two Greek words meaning to close the eye, so named because short-sighted people have a habit of half closing the lids to see distinctly. It is produced by the optical axis being too long, causing the rays of light to fall in front of the retina, as shown in Fig. M.

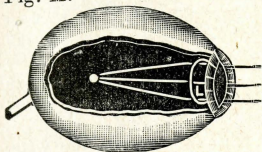


FIG. M.

It is already several years since Profs. Donders, Wells, Power, Graefe, Lawrence and many others unhesitatingly declared that a near-sighted eye was a diseased one, and is either hereditary or acquired, the girls generally following

the mother and the boys the father as to sight. Where near-sight comes on in youth and increases, or increases from birth or disease, it is a very serious trouble, and often leads to total blindness; in fact, all persons getting blind always become near-sighted first.

STARTLING STATISTICS.

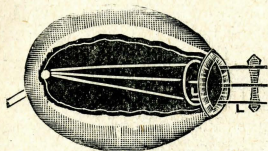
Dr. Forster, examining and watching fifteen thousand cases of myopia in four years, found 30 per cent. had lost their vision by near-sight.

Dr. Cohn, of Breslau, examined over 10,000 school children, and found the percentage of near-sight increasing from year to year. In the high school of the first class, nearly one-half were found to be near-sighted; other examinations made since, in this country and Europe, show the same tendency.

Dr. Harlan says, in his work on the Eye-sight, Page 79, "Because short-sighted people can see small objects close to the eye, and may be able to read after middle age without glasses, they imagine that near-sighted eyes are stronger than others. This is a dangerous delusion. An eye with a high degree of myopia is always unsound. This is a serious disease, which requires the most careful and skillful treatment. Another common mistake is the belief that near-sight diminishes with age, while the fact is quite the contrary. Even with the greatest care, there is nearly al-

BY DR. A. B. BARKER, OCULIST-AURIST, CINCINNATI, O.

ways more or less increase in myopia. During the period of childhood and youth, when the organs are growing, and the tissues are rapidly changing, the results of imprudence



Myopic eye neutralized by proper lens, L, focusing images on the retina, giving perfect vision.

and abuse are so disastrous that this is one of the most important problems that the reformers of the age have to deal with." He further says the selection of spectacles for near-sight requires great care, as much harm may be done by using those that are too strong, or that are not properly adjusted to the eye.

The plan of trying the various glasses on the optician's counter, or, what is far worse, the peddler's box, is about as rational and safe as it would be, in case of sickness, to try the contents of the various bottles on the druggist's shelf, without a prescription. He concludes by saying: "It is a great advantage to begin the use of glasses in youth, as the eyes adapt themselves to them much more readily than in later years. The eyes and the glasses become, as it were, one optical instrument.

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SPECTACLES FOR LONG-SIGHT (OR HYPER-METROPIA.)

LONG-sight, when not properly understood, is the source of great evil, and many eyes are lost from its improper treatment. Unlike the eye-ball of the near-sighted, which is elongated (egg-shape), and increases with age, it is from birth, and does not increase. It is, however, subject to the same changes as a normal eye. The optical axis being too short, causes the rays to fall beyond the retina, as in Fig. 1, next page. This defect necessitates using glasses. It is just as necessary for an over-sighted young person (perhaps even a child at six years of age) to wear convex glasses as for a near-sighted person to wear concave glasses. From general ignorance and prejudice the unfortunate children who are over-sighted are not allowed to wear spectacles, because it makes them look like "grandpa." Al-

THE EYE —HOW TO PRESERVE IT,

though both old age and over-sight require glasses, they are not in any way the same condition of the eye. (See article on cross-eyes.)

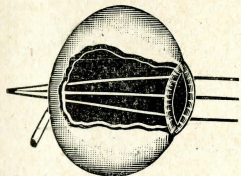


FIG. 1.

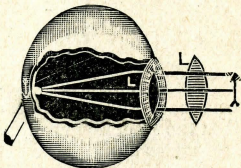


FIG. 2.

Hypermetropic eye rays pass beyond the retina. Fig. 2, vision corrected by lens L, focusing the rays of the retina, thus producing perfect vision.

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SPECTACLES FOR CATARACT (OR APHAKIA.)

IT is a positive fact, that by the absence of the crystalline lens, whether congenital or the result of an operation for cataract, or absorption from injury, or from dislocation from Iridectomy (artificial pupil), or abuse by improper glasses, the refractive power of the eye is very much lessened, necessitating the use of artificial lenses. Two pairs are required for this defect: one for far and one for near sight. Our success in the treatment of cataract is unparalleled; hence, we are supplied with the improved bi-convex and bi-concave lenses, made for our special practice. Those who require such aid will do well to call upon us:

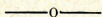
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COLORLED GLASSES.

IT is of great importance to the successful treatment of weak, sensitive, irritated and inflamed eyes, to properly regulate the light thrown upon the organ. Improper illumination is one of the most effective causes of injury. In certain cases it is necessary to soften, absorb, or otherwise modify the heated, luminous and chemical rays; this can only be done with colored glasses. Green glasses are injurious, since in bright light they transmit a very intense green, approaching a yellow, which increases rather than diminishes the irritated condition of the eye. Deep blue, as experience teaches, pains the eye in bright light, while pale blue, on the other hand, furnishes no effect-

ive protection; they weaken the light too little. The glasses whose color in reflected light approaches black, darken the visual field too much; they disaccustom the eyes to the light, and thus render difficult the return to a normal illumination. They also hinder the distinct view of near objects, thus causing the patient to strain his eyes. There are hardly two cases alike, that can and should wear the same color. None but an oculist can select them. Those who leave this selection to incompetent hands, will, when it is too late, find their mistake.

Goggles are alarmingly dangerous, from keeping the eye continually enveloped in vapor of its own moisture, compelling the patient to strain the eyes in looking at surrounding objects, besides when they are worn in an atmosphere loaded with dust, the meshes of the gauze become filled, and then their defect is increased. Coquils are also bad; they are liable to produce Myopia from their deep concave surface.



OCULIST vs. OPTICIAN.

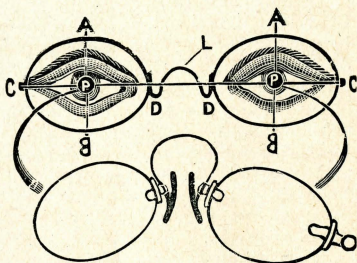
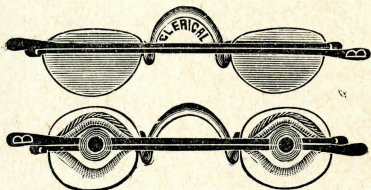
THESE terms are often regarded by thoughtless persons as synonymous, while in fact they refer to two very different persons. Opticians, as they style themselves, are only merchant dealers in ready-prepared optical goods. (Read article on Manufacturing of Spectacles.) Some of them may be fair salesmen, but is it safe to trust the precious sight to mere dealers? The architect draws the plans, while the laborer does the work according to the plan. The oculist is a physician and surgeon, who must be skilled to rectify all errors and abnormal defects of the eye, and is the only one to examine and test the sight and to adjust the exact lens required to neutralize the defect for which glasses are intended to correct. After trying and choosing the lens, he directs the optician how to set the lens in proper frames, the distance from center to center of pupil, its proper axis, base, angle, and the proper curvatures of the convexity or concavity for each eye. Just as the intelligent druggist compounds the remedies prescribed by the physician, no honest optician will sell glasses for the eye unless the glasses are chosen and adjusted by the oculist.

Frames for Spectacles and Eye-Glasses.

THE frames for spectacles and eye-glasses should be so prepared as to keep, always, the lenses in exact position before the eyes. The bridge (or nose-piece) and the other parts should be nicely fitted to the face, so as to avoid the possibility of shifting or falling off.

Persons who wear these aids to sight generally prefer spectacles to eye-glasses; but for occasional or temporary use, on account of their being more readily removed and replaced, eye-glasses are preferred.

Whichever frames are chosen, they should be so adapted that the glass shall be of the proper width, shall settle and rest at right angles before the eyes, and be just the right distance from them; as the slightest deviation from the true axis will destroy the needed effect and put a strain upon the eyes. Hence, to provide glasses for use, without abuse, the frames must have the right kind of



Dr. Barker's method of adjusting glasses and frames: A B A B, pupillary distance. C C, distance between the temples. D D, the width of nose. L, depth of nose. P P, the lenses correctly centered to the axis of vision. (See cuts on pages 21 and 22.)

We make and furnish any size, shape, strength, combination or color of this artificial aid to man's happiness, comfort, protection and preservation of sight. If you are not ready to change or to obtain a new pair of spectacles or eye-glasses, come and have your eyes examined. We preserve the record for future orders. Prices moderate.

nose-piece for each individual peculiarity of nose for spectacles and the right kind of spring attachment for eye-glasses.

The frames, too, should be of correct width and height, such as will allow the wearer to look through the central axis of the lenses when in use, a little lower and closer together for near than for distant objects—in general, as close to the eyes as possible without touching the lashes. The only exception to this rule is in the case of convex glasses, used only for near work, which may, without disadvantage, be placed a little further off. It is always best that the axis of vision—that is, the line along which the eye is directed—should be perpendicular to the surface of the glass; therefore, distance glasses should face squarely forward, those for near work decidedly downward, and those for constant use only slightly so. And it is important to have all concave, and all cylindrical, and all prismatic glasses as close to the eyes as possible.

The material generally used for spectacle frames is steel, finished in blue, or bronze, or plated with nickel. Steel is liable to rust, and, with some persons, it corrodes by moisture of the skin. Besides, steel acts as a conductor to heat, causing, in nervous temperaments, a current of electricity to pass through the temples, producing confusion and headache. Tortoise-shell, hard rubber and celluloid are very popular on account of their lightness; but they are liable to break, and celluloid is so inflammable that, coming near a blaze, will ignite and endanger the eyes. The most lasting and best for frames, and the cheapest, in the end, is gold, and next to it is either aluminum or nickel.

Glasses should always be cleaned with soft material or silk free from grit of any kind; tissue paper is good. A little ammonia or alcohol, diluted, is an excellent fluid for removing whatever adheres to the glass. Remember, that cracked, or scratched, or defaced glasses of any kind, strain and irritate the eye. Never place glasses flat down, for it defaces them.

Wearing Veils Affect Eyesight.

EVERY ophthalmologist has noted the fact that the habit or custom of wearing veils is productive of weak eye-sight, headache, and sometimes vertigo and nausea. A person having normal vision is able to distinguish with each eye separately capital block letters a quarter of an inch square at a distance of twenty feet, and to read diamond print with ease at a distance of fourteen inches. With this as a standard, the result of experiments were as follows, to wit:

The first test was made with a fine black net veil having small black dots two inches apart; there were 100 meshes to the square inch, with the dots one-sixteenth of an inch in diameter. It was found that, almost immediately after putting on the veil, distinct vision was reduced in each eye by two-thirds. Diamond print was read with difficulty through the meshes. When a spot was presented before the pupil, bourgeois was the smallest type that could be deciphered.

The second test was made with a single thread, chenille dot, black finish net—a veil worn frequently by the fair sex. There were 16 squares and 16 dots to the square inch. The result with this was a very slight reduction of the vision, both distant and near. When a dot was presented before the pupil the effect was the same as in the first instance or test, only more marked.

A black dotted thread net was used for the next experiment, with dots one quarter of an inch in diameter and numbering nine to the square inch. With this, the distant visual faculty was reduced from two-fifths to one-fifth, and from small pica to great primer, according to the object seen through the open meshes. All print was greatly blurred.

The finest plain black Brussels net was then tried, with the result that the vision was reduced to three-quarters, and fine print was blurred. The same veil, with pinhead dots, produced the same effect, but a test with plain black chiffon lowered the vision one-half for distance, and raised the type for reading from diamond to minion.

White veiling or Brussels net lace, with flower sprays, four inches apart, was used for the seventh experiment;

there were 60 meshes to the square inch, and under this strain it was found that pearl type was much blurred.

Perhaps the eighth test was the most satisfactory. Single thread dotted square mesh net was used; there were 48 meshes to the square inch, with dots one eighth of an inch in diameter and one and one-half inches apart. With this the vision was only slightly reduced. The same veiling was used in test number nine, except that the dots were four times as numerous, and the only difference was a marked reduction in vision when a spot was before the pupil.

Fine black silk net similar to that used in the first test, but with a flower spray three inches apart, produced much the same reduction in vision, except that when a dot was placed before the pupil, the sight was much more affected.

A test with a double thread net with four black dots and the meshes numbering 16 to the square inch was found to be most irritating to the eye. The vision was reduced to three-fifths, and minion type was blurred.

There was only a little advantage gained from the twelfth and last experiment, which was made with the same veiling as used in the eighth test, only with larger dots. It was noticed with this the vision was markedly reduced when a dot was before the pupil.

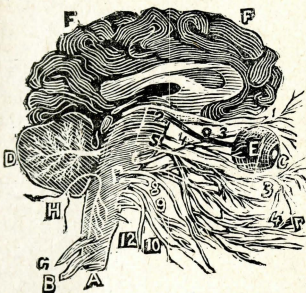
From these experiments we have reached the following conclusions: That every description of veil affects the ability to see more or less, the most objectionable kind being the dotted kind. The texture and meshes of the veil are important factors. The least objectionable veil is the one without dots, with large regular meshes, made with single compact threads.

The production of the weak eye-sight, in persons accustomed to wearing veils, is due not only to the strain consequent upon the added efforts made by one or both eyes to see through or around an obstruction, but the irregular figuring on the veil is itself a source of annoyance.

Should any of our readers have impaired vision or eye troubles of whatever kind, we ask to be consulted, as our long years of experience and successful practice enables us to decide upon the true causes of these peculiar afflictions, and to prescribe or furnish the most effectual remedies.

HEADACHE FROM EYE-STRAIN.

THE optic nerve (E, O, 2 in the accompanying engraving of the brain) is the largest of the twelve nerves which ramify the entire body. Imperfect sight, or the want of free circulation or nutrition, or the want



of harmony between the two eyes or their muscles, from wearing improper glasses, will cause irritation of this nerve and produce neuralgia, dizziness, hysteria and epilepsy. Beside headache, there will be weakness of vision, spots floating before the sight, eyes red and watery, squinting, flashes of light, double vision and spells of trembling;

also, ringing in the ears, general weakness, depressed spirits, and brain affection. Eye-strain headache is often the result of prolonged mental exertion, anxiety and grief, and, sometimes, from excessive joy or pleasure, such as witnessing a comic play where laughter is hearty and long continued. Our public school system has something to do with causing neurapathic tendencies. Scores of children, at the period of development, confined in a close room, the steady application expected of them, the bended position which they assume from weariness, and the incentive to stand at the head of the class, are potent factors in bringing on eye-strain and its many reflex disorders. It is to this period of youth that most sufferers with chronic headache can point as the time at which their trouble began, with pain in the temples, over the eyes, and at back of the head (rarely on top of the head). This pain is often periodical, occurring either at regular intervals or after some excitement, care, work or strain.

With women, a pain happens at the base of the neck, at the lower point of the shoulder-blade, and not infrequently at lower part of the back; and with men, it is felt

at the base of the brain, from the occipital muscle. After suffering for years in this way, unless the underlying cause is removed, neuralgia, or a more serious trouble may ensue. When this eye-strain headache is the result of undue muscle power, or unequal refraction (the two eyes not being alike), it can only be cured by shortening the muscle, or by wearing high-power prismatic compound lenses, peculiarly set in front of the eyes.

Eye-strain headache is not to be confounded with Hemicrania (sick headache). While both affect the vision, in one, a part only is affected, while in the other, the whole head is involved; one has its origin in eye-strain the other arises from disorders of the stomach, the kidneys, the circulation, or other constitutional derangement. Anxiety, grief, worry, business troubles, are some of its predisposing causes, while excessive use of tobacco and spiritous liquor intensifies it.

Persons afflicted with headache should consult us. Our long and successful practice renders us the most competent to discriminate between eye-strain and sick headache, and we are prepared to cure, either by glasses, operation or with medical remedies, this distressing malady.

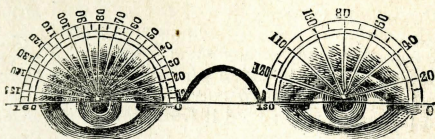
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ASTIGMATISM (PECULIAR SIGHT).

WHEN the rays of light entering the eye will not focus or form a sharp image on the retina, it is called Astigmatism. It is a defect from which many suffer for years without suspecting its nature. The eyes not being focused alike in the different meridians, there is caused a continual strain on the muscles and nerves, producing, in many cases, great discomfort and pain, serious nervous disturbance, sore eyelids, neuralgia, sick headache, vertigo, squinting, cataracts, engorgement and rupture of blood vessels, causing granular lids, ulcerations of the cornea, paralysis of the lids, double vision, spots to float before the sight, dizziness, depression of spirit and numerous other troubles. Occasionally persons with Astigmatism, and suspecting something is the matter with their eyes, will go to some store, some mere dealer in spectacles, and try to fit themselves with glasses, or unsuspect-

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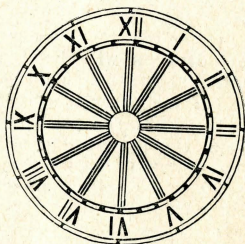
ingly accept such as the storekeeper may choose for them. The glasses, so obtained, may give aid or relief for the



This cut represents how the axis of glasses often requires to be set in the frames to correct the defect in the eyes. One eye may require an axis 90 degrees, while the other eye requires an axis 180, or 60 one eye, and the other 120, etc. Any one can see how utterly wrong it is to use ready made cheap decentered glasses.

time being, but the practice is dangerous, for under the most seeming favorable circumstances the wearing of glasses recommended by incompetent dealers, may, by relieving for the time one set of muscles, put undue strain upon another set.

There is only one way to correct or help astigmatism, and that is by scientifically grinding a lens of peculiar shape to offset the exact existing defect. This lens may require to be cylindrical plano, cylindrical cave or convex, or a cross cylinder, or a cylinder bound by a spherical; or it may be prismatical, or all three lenses bound in one, the axis to set at a peculiar angle. One of the lenses may require to be set in the frame at 90 degrees, while the other lens may require to be adjusted at 180 degrees. However, before such glasses can be prepared, a thorough examination and test of the eye is necessary, and no one is competent to



Astigmatic Test.

Place this cut 14 or 15 inches from the eye. Try each eye separately. If you have Astigmatism, some of the lines on the above cut will look bright, the others dim. This defect of vision can be corrected by a skillful oculist only, and nervousness, headaches, eye strain, and possibly permanent damage to your eyes or nervous system be prevented.

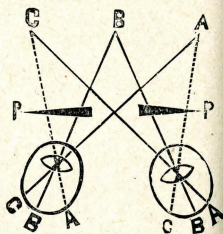
PRESERVE THIS FOR FUTURE TESTS.

The two sides of a face are never alike. In two cases out of five the eyes are out of line; one eye is stronger than the other in seven persons out of ten, and the right eye is generally higher than the left.

make such examination except a professional oculist and practicing specialist—one who understands by practice, as well as by theory, the structure of the eye, and who can locate with certainty its diseases and malformations. We not unfrequently find astigmatism combined with some other disease or defect which equally requires attention and great care and skill to correct. Look at Astigmatic Test, on preceding page; hold it from you 14 or 15 inches, trying each eye separately. If some of the lines appear blurred and others clear, then astigmatism is present, and you should, at once, be fitted with the only proper glasses made especially for you.

There are twelve muscles that move the eyes, six to each eye; they work in pairs, simultaneously. If the muscles which draw the eyes together are stronger than those which move them apart, they will constantly tend towards each other, and double vision will be the result. The same will be the case if the other muscles draw outward. To relieve this trouble peculiarly formed lenses are necessary—lenses so adjusted that the base or thick part of the lenses be placed over the weaker muscle—a nice and skillful operation, which only an experienced practitioner is able to perform. The exact degree of weakness in the muscle requires the finest discrimination, in order that the lenses properly fuse the two visual axes into one angle, otherwise the opposing muscles will suffer serious injury. Very few persons have their two eyes alike in focus and power. (See article on Cross-eyes.)

There are eye troubles which have their origin from constitutional causes, such as sometimes arise from diseases of the heart, the blood, the stomach, the kidneys and other remote causes, all of which comes within the scope of the professional oculist's diagnosis, to give proper and safe advice and treatment.



If the eyes turn in, the right will turn to C, and the left to A. If the eyes turn out, each will be directed to C-A (dotted lines). By placing the correct degree power and base properly—P P—the rays will be made to unite to B. Thus perfect vision will be the result.

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We have tried in this little book to avoid as much as possible technical and scientific terms. We have endeavored to use plain language. We have done so to enable the reader to understand the nature of our calling and the claims the professional oculist has to merit the patronage of those suffering from injuries, diseases and malformations of the eye, and from every form of defective vision. We make a thorough scientific examination and test of the



Hold this page about fifteen inches from your eyes. Cover each eye in turn, and notice which of these stripes in the four spots are the blackest. If they are not all alike, your eyes are in some way defective, and you should have immediate attention. Come, and we will examine them and tell you the exact trouble, and how to remedy and preserve them.

eye, and decide whether the trouble comes from local

or constitutional causes, and treat accordingly. When glasses are

needed, we furnish the proper and safe kind for every manner of defective or failing sight—such glasses as are exactly needed for each particular case. We make these glasses and fit them accurately to the eyes, nose and face, and we are prepared to mount the lenses in any style of frame, whether steel, rubber, shell, aluminum or gold. Our prices will be found as moderate as the first-class work and the material used will permit. Persons who are thinking about commencing to wear glasses should consult us. Our glasses will not injure the eyes, but will preserve them. With each pair furnished we give a written guarantee that they are as represented, and adapted to your particular need, and if, after a reasonable trial, they are found not to be correct, bring them in and get your money back. However, during our thirty years practice in Cincinnati, no one yet has asked their money to be refunded. During these long years we have treated and cured thousands of eyes, and can cure yours. If you do not need glasses, we will tell you so, and advise you how to save and preserve your sight. But if you do need them, after a careful and intelligent study of your case, we will furnish such as will be of great benefit to you. We have never recommended glasses simply to make a sale, and we want you to bear in mind that no glasses leave our office until they are perfect in every detail.

ASTHENOPIA (WEAK SIGHT).

Paralysis of Ciliary Muscles of the Eyes.

PARALYSIS is inability to maintain the adjustment of the eyes for near objects, any length of time, without fatigue; for instance, in reading or sewing, especially by insufficient light. The fatigued ciliary muscle relaxes and the accommodating power of the lenses in the eyes is suddenly lost, causing the print or sewing to become confused or unintelligible, accompanied with weariness and pain of the eye-ball and often in the forehead and the temple. In such cases, after a few minutes' rest, by closing the eyes, work can be resumed; but for a short time only, as the muscles will again lose their strength, and relax.

Young women, after a fit of illness, or a shock, causing nervous prostration, or from a debilitated condition of the system, or from other causes peculiar to their nature, are frequently subject to paralysis of the ciliary muscles. The use of wrong or improper glasses has the tendency to aggravate this special trouble.

In cases of paralysis, those whose sight had been previously good, should not resort to glasses of any kind, but should seek constitutional remedies, upon the advice of an experienced Oculist-physician.

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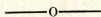
When Glasses Should be Changed.

THIRTEEN or fourteen inches from the eyes is the proper place to hold a paper while reading. If any greater distance is more convenient, it means that the old glasses are out of focus. If more than the usual light is needed, or the sight is blurred, or the eyes become fatigued, itchy or painful, or distressed in any way, a warning is given that the spectacles worn are an abuse rather than a use. The present glasses may be too small or too large—a misfit certainly—a want of proper axis and an exposure to serious injury. One eye, perhaps, is stronger than the other, or the two eyes are of different capacities, while the spectacle lenses may be of similar strength and alike ability. Imperfect vision, in this case, must be the result. By frequent rubbing and cleaning, the original fine polish of the glass may be dulled, scratched or otherwise defaced,

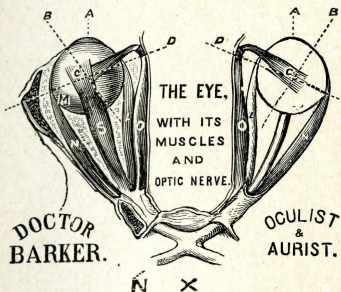
THE EYE—HOW TO PRESERVE IT,

thereby interfering with clear and bright view. In cases of bodily derangement or sickness, an unusual draft is made upon the eyes, which will, during such time, require increased power in the lenses to do the work found necessary in times of better health.

In a word, when there is felt discomfort of any kind in the wearing of the old glasses, there should be no hesitation in procuring new ones suitable to the present need.



CROSS-EYES—SQUINT.



THE eye is virtually a ball, placed in a socket, the orbit and the bulb forming a ball and a socket-joint.

A A, the direction of sight in a normal eye
B B, direction when eye is turned out. I D,
direction when eye is turned in. N, External-
rectus muscle S. Superior rectus. I, Internal
rectus. O, Superior oblique. M, Eyeball. One
of the muscles is cut away to show the optic
nerve. The lower muscles are underneath, which
can not be seen. N X, Optic nerve connection. A C,
Optic axis.

recti-external outward; the recti-inferior oblique, and the recti-superior oblique rotates the ball around its plane. But it is found by calculation that the attachments and directions of the six muscles, proven by actual observation, constitute three pairs, each pair rotating the eye around a particular axis.

Although we have two eyes, and therefore receive from every object two sets of visual sensations, our perception of any object is a single one. We see one object, not two.

By putting either eye into an unusual position, no matter how slight it may be (as by squinting), we can render the perception double; we see two objects where only one exists, from which it is evident that perfect sight depends on binocular vision; also that singleness of perfect perception depends on the image of the object falling on a certain part of each retina at the same time, these parts being so related to each other that the sensation from each is blended into one perception. It is also evident that the movement of the eye-balls are adapted to bring the image of the object to fall on those corresponding or identical parts of each retina.

If, when vision is directed to any object, the head moves from side to side, the eyes do not move, they appear to remain stationary—very much as the needle of the mariner's compass remains stationary when the head of the ship is turned. The change in the position of the visual axis, to which the movement of the head would seemingly give rise, is met by compensating movements of the eyeballs. If it were not so, steadiness of vision would be impossible. By watching the movement of any person, it will be seen that the two eyes move alike. If the right eye moves to the right, so, also, does the left; and if the object looked at be a distant one, exactly to the same extent. If the right eye looks up, the left looks up also; and so in every direction in the field of vision. Very few persons are able, by a direct effort of the will, to move one eye independently of the other. It is only when loss of co-ordination occurs, as in various diseases, malformations and in alcoholic and other poisonings that the movements of the two eyes cease to agree with each other. (See article, *Why We Have Two Eyes.*) It is evident, then, that when we look at an object to the right, we thereby abduct the right eye and adduct the left. We throw into action the rectus internus of the right eye and the rectus externus of the left; and similarly when we look to the left we use the rectus externus of the left and the rectus internus of the right eye. When we look at a near object, and thereby converge the visual axis, we use the rectus internus of both eyes; and, when we look at a distant object, and bring the axis from converging towards parallelism, we use the rectus externus of both eyes. In the various movements of the eye there is, so to speak, the most del-

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icate picking and choosing of the muscular instruments, to produce perfect and strong vision by bringing the two visual axes into one point. Thus

we must have binocular vision to afford the correct and safe means of forming visual judgment concerning the form, size, depth, solidity and distance of objects. Every one who has tried to thread a needle without using both eyes knows how difficult it is. If the two eyes, one of which is looking at red and the other blue, be accommodated for rays, the red sensation will overpower the blue, and vice versa. The slightest weakness or incapacity of any given muscle, no matter how slight the weakness, or how it is produced, destroys the parallelism of the axis of the eyes, causing deviation, and this deviation we call Strabismus, squint or cross-eyes.

This deformity is manifested by a preternatural mobility of turning in (A-B) or turning out (C) the one convergent-squint, the other divergent squint; besides, there is a turning up or down of the organ. These contortions destroy the parallelism of the visual axis of the eyes, and impair the personal appearance of the individual. Nor is the appearance alone concerned, as the functions of the eye also suffer, and the vision is seriously impaired, one eye being nearly blind, and the other weak or near-sighted or over-sighted. A cure, therefore, of cross-eyes involves not only a wonderful improvement in looks, but the restoration of sight. Every degree



A



B



C



D



E

A. Single convergent squint.

B. Double convergent squint.

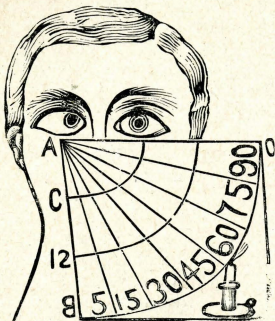
C. Double divergent squint.

D. Divergent and convergent.

E. Perfectly straight.

of squint exists, from the slightest appreciable cast to the A to 5, A to 15, A to 45, or A to 90 degrees of the

cornea is turned into the canthus. (See cut of degrees.)



This illustrates the various degrees of Squint or Cross Eyes, as from A to B or A to 30 or A to 90. The slightest degree of squint in a child will increase with age and, result in blindness unless it is cured very early.

4th, where both are conspicuously cross-eyed. 5th, where the eye turns up. 6th, where the eye turns down; and 7th, where the eye moves obliquely. Operation for squint or cross-eyes was first undertaken by Prof. Von Graef simply to remove the deformity, and all squinting eyes were operated on indiscriminately and without the proper knowledge of their cause; consequently there were some unfavorable results, and the practice gradually fell into disuse. But, by the advantage of modern science and the experience and skill of the eye specialist, the straightening of cross-eyes is now accomplished by a simple and almost painless operation, giving perfect vision and removing a vexatious blemish of the countenance.

CAUSES OF CROSS-EYES.

Cross-eyes are often congenital. Sometimes it is the result of an opaque spot on the cornea, or from paralysis or strain of an ocular muscle. And not infrequently it is acquired by a young person persistently trying to look just like a cross-eyed companion, or by the children of a school mischievously mimicing their crooked-eyed teacher; or by their playful game of to see who can look longest at

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the point of their own nose, or who can hold a book closest to the face and read. Sore eyes, too, wrongfully doctored, will produce it. Fevers, measles, smallpox, diphtheria and whooping cough or injury to the head, and also near-sighted and over-sighted persons may become cross-eyed by wearing glasses improperly prepared for their individual case.

Beautiful eyes are an adornment to the divine countenance, and any defect, no matter how slight, makes the impression felt upon the character of the individual. The epithet, "cock-eyed," etc., of the rude, and the remarks of the thoughtless are among the most painful recollections of those thus afflicted. Adults become morbidly sensitive, and the mentioning of "cross-eye" to them causes frequently their self-seclusion from society. It is a great wrong to permit a child to grow up with this defect, when the means of curing it is within easy reach. The defective eye undergoes a steady progressive deterioration of vision, and the remedy cannot be applied too soon. Prof. Soelberg Wells, in his treaty on the eye, says: "The question is often debated as to whether a child of two or three years of age should be operated on for squint, or postpone the operation until it is much older. My opinion is very strongly opposed to the latter practice, and is urgently in favor of the operation being performed as soon as possible, while binocular vision exists, and the sight of the squinting eye is yet good. When, however, it is necessary to postpone the operation, the vision of the squinting eye should be neutralized by proper lenses (glasses), to take off the effort of accommodation."

In his work, "Recent Advances in Ophthalmic Science," Dr. Williams, of Boston, says: "It is impossible to insist too strongly on the importance of an early treatment for the relief of cross-eyes, and on the fallacy of popular belief which 'thinks it probable that the child may outgrow it,' or considers it 'best till the child is older before having anything done.'" The sight in thousands of cases have been sacrificed to these two erroneous opinions." In childhood, the trouble is not fully established. The muscles have not yet become rigid, and binocular vision is more readily restored. Although one eye alone squints, the other eye will keep on growing weaker and weaker, through sympathy, and will be in danger of becoming a squinting eye also.

The sooner, then, will the child be exempted (if it is afforded relief) from the habit of holding its head crooked, the sooner will it be able to measure distances and have opened to it a greater number of trades, occupations and professions from which to choose, to say nothing of the freedom it will enjoy from the gibes and jests of its rivals. It is true, cross eyes can be straightened later in life, and the sight improved; but not to so great an extent as when the remedy is applied in early youth.

The operation is not a tedious one, nor does it subject the patient to any inconvenience, providing it is performed by an experienced and skillful oculist. There are cases which require the nicest discrimination in ascertaining the character and degree of the squint—whether one or more muscles are involved, or whether one or both eyes are affected.

Besides, there are required the finest instruments especially prepared for the work, and to be handled adroitly by a professional oculist of long experience and successful service. Such a specialist can alone determine upon the exact degree of the squint, and whether glasses can be substituted for an operation.

The exaggerations and absolute falsehoods of ignorant or vicious quacks, charlatans and mere spectacle venders as to the practicability of operation in any case of squint, asserting that the experience and skill of a professional oculist is unnecessary, and that from their own stock could be selected glasses that would remove the trouble, improve the sight and preserve the eye, should be condemned by every true physician, by every intelligent and true friend of science, and by every honest man.

It should be remembered that a common glass will act as an injury rather than a remedy. As a rule, cross eyes take a deeper and deeper root. Anything that tends to development of cross eyes must be avoided, as far as possible. A complete and perfect neutralization by peculiarly prepared glasses is urgently required for each individual case.

Prof. H. D. Noyes, in his work on "The Eye," says: "The rule is that when squint is once established it permanently remains; that the contracted and enfeebled muscles undergo organic change. It is often found in operating that the muscles seem rigid, as well as hypertrophied.

THE EYE—HOW TO PRESERVE IT,

In the incipient stage of converging strabismus, we may prevent its establishment by employing the proper glasses needful for correcting ametropia, or by paralyzing the accommodation. Young children can wear the glasses in the house." Prof. Utrich recommends esserine to assist the accommodation; but there is no permanent gain without using the needful correcting glasses.

Our own method of performing an operation on cross eyes is new and painless, and requires but a moment to relieve the obstruction which causes the distortion and impairs the sight. We invite consultation in all kinds of eye troubles, whether arising from injury, disease or from malformation; and if operation, glasses or constitutional remedies are used, our charges in all cases will be reasonable.

From our books, kept since 1870, we find that, out of 1381 cases of the various forms of cross eyes which we treated, there are cases as follows:

Myopia with divergent squinting	340
Hyperopia with convergent squint	620
Astigmatism " "	85
Amblyopia " " partial loss of sight	92
Ansimetropia—different refraction, one eye myopic, the other hypermetropic, with divergent squint	71
Opacities of cornea, with convergent squint	48
Blephro-margitis—inflamed lids, with convergent squint	36
Opacity of the lens—cataract with divergent squint	20
Amaurosis (blind in one eye), with squint	69

Total 1381

436 cases had diplopia (double vision). 240 cases diplopia could only be produced by high power prisms, bases outwards. 101 cases, Diplopia with 10 degree prisms, bases inwards. 604 used one eye only. Total number diplopia cases, 777.

The following are the above cases, with the respective ages:

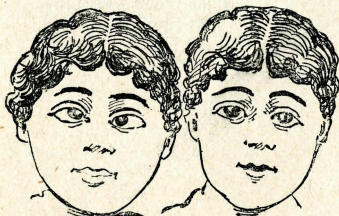
11 months old	3 cases.
2 years old	36 "
4 to 10 years old	168 "
6 to 15 " "	242 "
16 to 22 " "	310 "
23 to 31 " "	280 "

34 to 55 years old	110 cases
57 to 61 " "	38 "
62 to 70 " "	25 "
71 to 80 " "	5 "
81 " "	2 "
Ages unknown	162 "

Total	1381 cases.
Treatment—Operation on both eyes	644 "
Operation on one recti interni	241 "
Operation on both recti externi	218 "
Operation on one " "	78 "
Strabismus cured without operation, by correcting errors of refraction	200 "

Total 1381 cases.

We straighten cross-eyes at all ages, but many reasons can be given why the best time to cure is in early youth. Parents and guardians should see to it that they do not neglect their trust, that they do not let the child grow up with each day weakening sight, with each day confirming more and more an enduring and embarrassing deformity. The wearing of ordinary spectacles, selected by store-keepers, will not afford relief, but only increase the defect. An operation by our newly discovered and almost



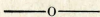
BEFORE AND AFTER OPERATION, CASE NO. 1164.

painless process will effect the desired result in a minute, without any confinement in a dark room, without any bandages or further treatment. The treatment is exclusively my own. In 1871 the discovery was accidentally made. In that year

while as an oculist-surgeon I was performing a very delicate surgical operation for a unusual and peculiar eye defect, I found, after I had succeeded, that a very pronounced cross eye had become straightened. Since then we have straightened thousands of eyes in Cincinnati and immediate neighborhood. No other physician except my son, Dr.

THE EYE—HOW TO PRESERVE IT,

A. B. Barker, Jr., who is associated with me in the treatment of all diseases of the eye, ear, nose and throat, is acquainted with my method, which has secured to us such wonderful success, and made so many afflicted glad. No other physician can furnish, at a few moments' notice, so many living witnesses of known crooked eyes that have been straightened, the sight improved, and which the possessors of them are willing to come forward and gratefully acknowledge. Terms within reach of all.



LIGHT AND LENSES.

LIGHT is transmitted by means of vibration in ether, according to the principles of wave motion. It radiates equally in all directions, travels in straight lines, and moves 186,000 miles per second. Light, falling on a body, may be absorbed, transmitted or reflected. If the surface upon which it falls is rough, the reflection produces the object imperfectly. If the surface be smooth and highly polished, the rays are reflected as they fall and they form a true image of the object before the surface. Such surfaces are termed mirrors, plain, concave or convex.

The ancients, knowing that light moves in straight lines, deduced the laws of refraction, and we are told that Archimedes set fire to the Roman ships of Syracuse by means of concave mirrors.

Euclid and Plato, however, thought that the rays of light proceed from the eye to the object—an error which took a thousand years to correct. Alhazen, who lived in the eleventh century, discovered that when a ray of light passes from one medium to another of different densities, it is refracted or bent out of its course. In 1608 Galileo invented the telescope, for which he was incarcerated in a dungeon one year, and twenty years later Jansen produced the microscope. Snell discovered the laws of refraction. Descartes explained the rainbow, and half a century afterwards Newton elucidated the decomposition of light. It was Roemer who, observing the satellites of Jupiter, found out the velocity of light, and in the first quarter of the nineteenth century, Young made known his theory of light and of optical phenomena. Hence commenced an improvement in prepared glasses for aids to sight.

A lens is a transparent substance having one or both sides ground to a curve and polished. (See how lenses are made, pp. 9-11). Convex lenses are composed of prisms with bases towards each other (Fig. D), concentrating the light to a focus and forming a picture (Fig. D). A concave lens is composed of prisms with their apexes towards each other, and disperses the light, and do not form a picture (Fig. F).

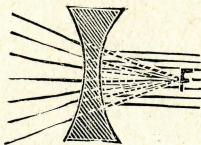


FIG. F.

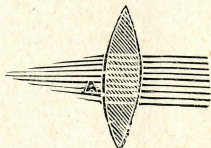


FIG. D.

Spectacle lenses are termed plano-convex, E, bi-convex, D, periscopic-convex, H, plano-concave, G, bi-concave, F, periscopic-concave, I, convex-cylinder, C C, concave-cylinder, C C C, prism, A, solid-bi-focal, K, split-bi-focal, L, and Perfection bi-focals, N. (See illustrations pp. 50-51).

The simple fact is that light passing from a rare to a dense medium is bent towards a perpendicular line drawn towards the surface. This bending of light is called refraction, and all curved surfaces of transparent media act on light in this way.

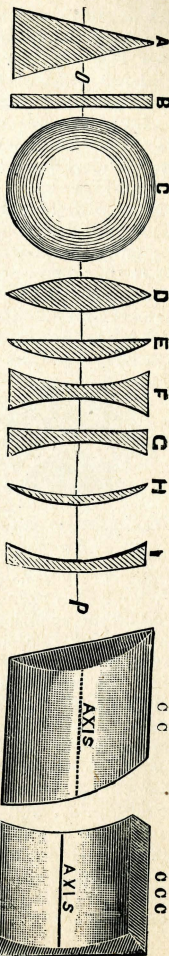
If the surfaces are parallel, like the sides of a piece of plate glass, the light passes on without any apparent change in direction, although in reality it has taken a zig-zag course in passing into and out of the glass. If, however, the surfaces, instead of being parallel, are wedge-shape, as a prism, A, the light is permanently changed in its course.

If one surface of the glass is plane, and the other is curved like the section of a globe, and thick in the center, thin on the edge, it is a convex lens, D, and will magnify an object seen through it. If it is thinner in the center than on the edges, it is a concave lens, F, and will diminish the size of an object seen through it. In spherical there are two general divisions. The bi-convex, both surfaces of which are convex; the plano-convex, E, one surface plane, the other convex; the periscopic-convex,

THE EYE—HOW TO PRESERVE IT,

one side being convex, the other concave, but the convex having the sharper curve, and leaving the lens thicker in the center. All these are classed as convex lenses, and will magnify objects seen through them. The second division of spherical lenses are the concave. These include the bi-concave, both sides of the lens being concave; the plano-concave, one side concave, the other plane; the periscopic-concave, one side being convex and the other concave, and the concave side being the sharper curve. All the lenses in this division are thinner in the center than on the edges, and diminish objects seen through them. All the spherical lenses, within mentioned, have the same focal power in all meridians, the central point, the cone, being the thickest point in the convex, and the thinnest point in the concave lenses, which are termed the axes of vision, O P.

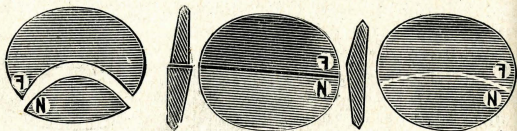
We use the spherical lenses in correcting errors of refraction where the defect is equal in all meridians of the eye, and the convex are used where the eye is too short (Fig. 1, p. 28) from back to front to focus the rays of light on the retina. This is called Hypermetropia, and the correction is made by giving sufficient curvature in the lens to add to and supplement the curvature of the eye to render the vision perfect. The concave lenses



EXPLANATIONS.—A, prism; B, plano; C, miniscus; D, double-convex; E, plano-convex; F, bi-concave; G, plano-concave; H, concave-convex, or periscopic-convex; I, periscopic-concave; CC, cylindrical-convex; CCC, cylindrical concave; O-P, optical axis.

are used to correct errors of refraction, where the eye is too long from back to front (Fig. M, p. 26), and therefore has too much refraction. This is called Myopia, and the concave lens subtracts from the refraction of the eye to give the normal vision.

Many eyes are not symmetrical or round. This defect is called Astigmatism. They have a different curvature in one meridian from the curvature of the others, and the natural inference, of course, is that these should be corrected with lenses having curvature of sufficient power in each meridian to give the desired correction. This is made by having the curves of a cylinder, as illustrated in C C, C C C. The cylinder lens is ground in but one meridian. The other has no power, unless the other surface of the lens is ground either spherical or cylindrical. The cylinder lenses are made both convex and concave, as illustrated (C C C). The prism shown in Fig. A is used to correct



N-Perfection Bifocal. L-Split Bifocal. K-Solid Bifocal.
F-Distant vision. N--Near vision.

imperfect action of the muscles of the eye. (See cut, p. 37.) All lenses are comprised and consist of some form or combination of spherical, cylindrical or prism. These may be again complicated with lenses of various tints. Bi-focal spectacles have been made for many years, the general form being simply to split the ordinary spherical lens, as shown in Fig. L—the upper portion being adapted to the distant vision, to overcome the hyperopia, and the lower portion being added to give it sufficient refraction to overcome the presbyopic change of the eye, to give vision for reading. These are called the split Bi-focal (Benjamin Franklin's), and are entirely satisfactory in most cases, and equal to any other form, excepting the distant vision is limited somewhat in the field compared with that of solid lens, so-called. Perfection or cement styles are in all essential particulars the same. The split bi-focal is as good as any.

Figure K illustrates the solid-ground bi-focal. This is

the most defective of all forms for the reason that the upper or distant portion of the lens necessarily is prismatic in its effect. There is no possible way of grinding these free from that error, and while to the unskilled observer they look better than other forms, the defect in them renders them very much inferior. Further, the vision is circumscribed, as the line of separation between the two powers must necessarily curve upward as it proceeds from the center, as shown in the above illustration.

Great care is necessary in setting lenses in frames for spectacles and eye glasses, so that the optical center or axis of the lens ($O P$) corresponds with the axis of vision, otherwise the lens becomes a prism when the optical center deviates from the true axis of the spectacle eye. Concave lenses should be brought as close to the eye as the eyelashes or lids will permit, and be in such position before the eyes that the center of the lens, ($P P$, p. 30) will be directly opposite the pupil, P , when the attention is directed to distant objects. There should be no forced inclination of the head backward to accomplish this result. Convex lenses should be placed about three-fourths of an inch from the eye, and at such an angle to the line of the face as will bring the axis of the lens and the axis of the eye, when directed to near objects, directly in one line ($P P$, p. 30). Persons who have accustomed themselves to the use of either one of this form of lenses should adhere to that shape, as the eyes will not feel natural for a while, until the muscles of convergence of the two eyes have acquired the habit of adjusting the eyes to the changed form of the inner curve of the lens. Periscopic lenses (Prof. Wollaston's). By this form of lens the images are less disturbed in oblique vision, and the eyes can move freely, and move around behind the glasses, and thus obtain a clearer view of objects situated obliquely in the field of vision without changing the position of the head. Persons who are using high power bi-convex or bi-concave lenses will find an advantage by changing to a periscopic lens, for it gives better vision in an oblique direction, and the eye will not tire in reading long lines.

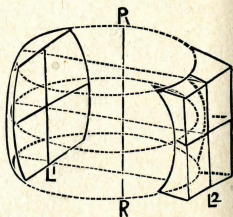
The convex lens is sometimes termed a burning-glass, being used like the concave mirror, for collecting the sun rays. Lenses of high power can be made to melt a stone almost instantly. Even glass globes of water, such as are

used for gold fishes, in the windows of drug stores, often fire adjacent objects.

When the eyes are exceedingly sensitive to bright light, such as sunlight reflected from snow, white sand or the white page of a book, colored glasses should be worn, but great care should be taken to remove them as soon as they cease to be exposed to the irritating influence.

The retina retains an impression about one-eighth of a second. This explains why a wheel, when rapidly revolved, appears solid, or a lighted brand like a ring of fire. On the other hand, it requires a moment for an impression to be made. Thus a wheel may be whirled so swiftly that its spokes become invisible.

Lenses are either pebble, British crystal or white crown glass. Pebble lenses possess the advantage of being extremely hard, and are not easily scratched or broken. Besides, they bear a much higher polish than glass; they are more refractive, therefore not thick, and as they refract the heating rays of the eyes, they maintain their natural temperature. Next in order for excellency are British crystals. White crown glass is a good material, and the ordinary spectacles are made of it.



Toric Lenses for peculiar sight

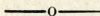
Travelling venders of spectacles are very apt to impose ordinary glasses for pebbles upon those whom they persuade to buy their wares. Low-priced common flint or sand glasses are objectionable, and should be avoided.

Coquillins or very deep concave glasses should be used with caution; also goggles, as both are injurious.

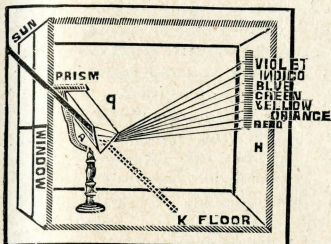
With our thirty years as practicing oculist, and having the very best facilities, and aided by all modern inventions for the successful examination of the eye, we are prepared to decide upon the real trouble, and treat by operation, when needed, or by local or medicinal remedies, or by glasses scientifically prepared. Consultation free and terms for cure moderate.

Should you learn nothing else, you will see for yourself with what skill, wisdom and goodness all these beneficent

laws have been arranged. These things came not by chance or of themselves. They all point to a great and wise Creator, who has given the light a pathway, and filled it with bewildering and perpetual beauty. It is the light that gives us life and vigor, that paints the flowers, tints the clouds, and decks the sky in blue. Everything selects its own particular color out of the solar spectrum, and shines with all the radiant beauty and glory of the light. No man hath counted all the glories of light, nor hath any man yet traced all its paths. It brings us strange messages from the distant sun. It makes all nature beautiful and life worth living.



The Effect of Light Passing Through Transparent Substances.



WHEN a ray of light passes through a triangular piece of glass, called a prism, as in accompanying cut, P, the ray is not only bent from its course, but is also spread out, fan-like, into a band of seven colors — red, orange,

yellow, green, blue indigo and violet. But a ray of light passing through a convex lens produces simply a white spot. We therefore conclude that white light is composed of seven colors.

They are separated because the prism bends the ray unequally. The brilliancy of the diamond and other precious stones is due to their great power of refraction by being cut into minute Facet, thus separating the light in its compound colors. So also the rainbow is produced by the refracted light as it passes through the transparent globular drops in falling rain.

Three classes of rays exist in the solar spectrum, viz: the Calorific, or heat rays, the Colorific, or luminous rays,

and Actinic, or chemical rays, such as the photographer uses in making pictures. If we examine the light with a delicate thermometer, we find that the heat increases from the violet to the red, and becomes the greatest in the dark rays. All colors have the same light, heat and chemical power, and the same radiant energy. If we test with a paper containing chloride of silver, it will blacken least in the red, most towards the violet, and some in the dark space beyond. Between these two extremes lie the ray which strongly affects the eye, as there is an imperfection of achromatizm in discrimination between colors of the eye, in all persons, which is easily proved by looking through a plate of Cabott-blue glass at a small hole in a window shutter of a dark room. At first, the appearance is that of red surrounded by a blue space; but by an effort of the eye muscles it becomes blue, with a red space around it. Hence the nature of light and its effect in passing through the various forms of transparent substances should make us careful as to the material and structure of the glasses we use for the aiding of sight. Light is necessary for vision. In darkness the perfect eye fails. But even with good light the vision of weak eyes is suppressed, and to the deficient ones all objects are distorted. Lenses of spectacles, if properly prepared, will do good without evil; will strengthen the eyes without abusing them; will aid the sight without tiring or heating or inflaming the eyes, and which will be free from the headache, nervous derangement, brain affections and loss of sight, not unfrequently the result of wearing the wrong glasses. Besides, eye troubles are so numerous, and there are such nice distinctions between one and another that no one, certainly, but a professional, experienced and skillful oculist is competent to make the examination, locate the difficulty and prepare or prescribe the kind of glasses that will surely help the sight and preserve the eye.

—o—

COLOR BLINDNESS.

AN ability to distinguish colors is a matter of great importance in the present age of railroads and steamboats, when cars and boats are guided at night by different colored signal lights, and the lives of thousands of passengers depend upon the proper appreciation of the

different colors by those having charge of the running of boats or trains at night. Yet, occasionally persons are met with whose eyes are insensible to certain colors. Persons having this anomaly of vision are not generally aware of it themselves.

Dr. Favre, physician to the Paris and Lyons railroad, found, between the years 1864 and 1868, in 1196 cases examined by him, 13 of insensibility to red rays and 1 to green. In the years 1872-1876 he examined 728 men, and found 42 cases of more or less insensibility to red rays.

Those in whom this defect is completely developed see in the spectrum but two colors, which they designate under the names of blue and yellow. They apply the latter name to all the red, orange and yellow, and the green they call bluish-green, and all the other colors blue. They do not see the red at all, or only when it is intense. Among the colors of bodies they confound the red with brown and green. Red is absent in their system of colors.

No engineer, pilot or master of a signal station should be permitted to serve in that capacity until he has been thoroughly examined and found to be free from color-blindness. Doubtless many accidents have happened, and lives and property have been sacrificed, by the neglect of this rule, when the engineer or pilot was careful, attentive and otherwise competent, but was unable to distinguish the red from the green light, or mistook the green for the red.

Have your eyes examined scientifically by a competent oculist.

—o—

PRACTICE MAKES PERFECT.

THE following record will show the number of optical cases successfully treated by us locally or constitutionally, during the many years' practice:

Cataracts—congenital in young children	562
Cataracts in middle-aged and old persons	1,531
Cross-eyes, various forms, straightened from two years old to seventy-one years of age	5,362
Sore eyes (Ophthalmia), such as conjunctivitis, gonorrheal, scrofula, granular, syphilitic, catarrhal, phlyctenular, diaphtheritic, egyptian and ophthalmia in new-born infants	3,654

BY DR. A. B. BARKER, OCULIST-AURIST, CINCINNATI, O.

Pterygium scums	311
Iridectomy—artificial pupils made.....	264
Eyes removed (Enucleation)	622
Drooping of the eye-lids (Ptosis)	206
Turning in and turning out of the lids (Ectropium and Entropium)	301
Stoppage of the Lachrymal canal, strictures, ulcers, polypus and fistulas	408
Iritis—inflammation of the iris	161
Keratitis—ulceration of the cornea	209
Simple conjunctivitis (common sore eyes).....	922
Artificial eyes inserted	7,688
Spectacles made and adjusted for Myopia—near- sighted	3,362
Hyperopia—over-sighted	4,104
Astennopia—weak-sighted	2,121
Astigmatism—peculiar sight	2,263
Presbyopia—aged sight	3,382

THE EAR—HEARING RESTORED.

Total deafness	264
Partial deafness	410
Discharges from the ear (mastoid abscesses).....	316
Noises in the head and vertigo.....	211
Polypus in the ear (ear-drums inserted).....	

THE NOSE—AFFLICTED RELIEVED.

Polypus in the nose.....	110
Nasal catarrh, dry, moist and ulcerations.....	2,562

THE THROAT—CURES.

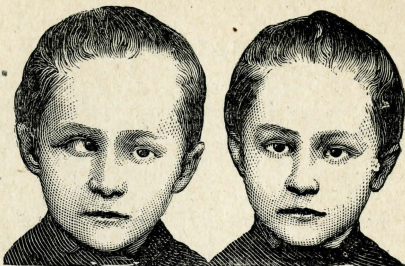
Enlarged and ulcerated tonsils.....	216
Enlarged and ulcerated uvula	203
Tonsils removed	205
Syphilitic sore throat	207
Cases not classified (moles, tumors, hare-lips	2,628
Prescriptions made	1,205
Cases examined and opinion given.....	3,164

Total	49,134
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As reference to our books will more clearly and at large appear.

Removed foreign bodies from the eye, ear, nose, throat	285
-----------------------------------------------------------------	-----

Mrs. Theresa Smith, 680 Delaware st., Indianapolis, Indiana, writes: "It is now 8 years since you straightened the eyes of my daughter Gale, and, as I look at her, my heart and thoughts go out to you in gratitude for the great good you have done us."



Before and After Cure.

DEAR DOCTOR: You operated on my little daughter for cross eyes in 1888, and I am glad to say that her eyes are perfectly straight and strong. I have another younger daughter that I want to bring to you for treatment for the same trouble. Please write me when to come to your office. With my kind wishes, I am truly yours,

WILLIAM HAGAMAN, Dry Goods Merchant,
Clinton, Alabama.

June 1, 1892.

CINCINNATI, O., May 27, 1895.

DR. A. B. BARKER, Cincinnati: The operation performed by you upon my cross eye, nearly five years ago, has proved a complete success. The two-year old child, which was very cross eyed, and whose parents I referred to you only a few months ago, has now a beautiful pair of eyes as the result of your great skill in this line. Wishing you great success, I remain, yours very truly,

A. D. MORGAN,
442 East Sixth Street (New No.)

MARTINSVILLE, IND., June 1, 1892.

I entreat any one afflicted with head diseases, cross eyes, or any trouble of the eyes, to call on Dr. Barker. He straightened my eyes most successfully, and I cannot find words in which to praise and thank him enough for what he did for me.

MRS. ANNA CAIN, nee JOENS.

DR. BARKER: The little child of Burnett H. Myers is doing finely; her eyes are now perfectly straight. We all agree that it was a wonderful operation you made. Very sincerely, Mrs. HON. J. J. COOPER, Ex-Treasurer State of Indiana, 400 Meridian Street, Indianapolis.

MY DEAR DR. BARKER: Please send me a pair of glasses, same kind as you adjusted to my vision some years ago. My eyes have aged very little since. I am delighted to hear of your success. I hope you will continue to prosper more and more, until you think you have enough for your purposes, while I am sure you will ever be philanthropic and honorable. Certainly no specialist I ever met with better deserves success than yourself. With best wishes for your health and happiness, I remain very truly, your friend, J. P. PRYOR, Frankfort, Ky.

Editor Frankfort Yeoman.

N. B.—Daniel Driscoll's eyes are perfectly straight.

We have the photographs and testimonials of thousands of cases from among the best people in the land, showing the success of Dr. Barker's new method for the painless cure of cross eyes.

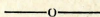
THE EYE MIRROR.

BEFORE the invention of the ophthalmoscope retinascope, but little was known of the deeper seated diseases, hence a facetious definition of many diseases was named amaurosis, a disease in which the patient sees nothing and the physician sees less; but in this day the skilled oculist can now see distinctly any pathological changes in the eye or in the system, and can preserve sight and even save life. The ophthalmoscope, like most other valuable discoveries, was the gradual development of an idea. Dr. Cuming demonstrated that by a certain arrangement of light thrown on the pupil of the eye, in place of being black, it will appear red, and the fundus of a healthy eye could be made visible. Although he never obtained a view of the optic nerve or vessels of the retina, his experiments prepared the way for a progressive discovery which was made by Prof. Helmholtz in 1851. The next year Prof. Ruet made an improvement. Then Dr. Liebreich added a few lenses. Dr. Coccius carried it nearer to perfection, and thus the rude form of the ophthalmoscope was produced. Drs. Henry Knapp and Lorning, of New York, brought this ingenious and wonderful instrument almost to perfection. It consists of a concave mirror of various curvatures, having a perforation in the center. The mirror is mounted in a metal frame, to which a handle is fixed. The mirror is either fixed or is made to swing on its axis. Behind the mirror is a cylinder containing a series of small lenses, positive and negative, plus and minus, focused from $2\frac{1}{2}$ to 100 meters. Before examining the patient, the pupils are dilated by atropia. (That is, if the eye is diseased or a latent trouble exists. An experienced hand does not require the use of atropia. The observer takes a seat or stands in front of the patient, who is seated in a dark room. A jet of gas or lamplight is placed on a table behind the patient in a peculiar way. The observer places the back of the mirror close to his own eye, so that he looks through the central aperture, and holds the instrument at such an angle that the reflected light from its concave and brilliant surface falls upon the patient's pupil. To do this successfully requires considerable practice. With the other hand the observer holds a lens of a certain power. By moving the mirror at a proper distance to or

from the eye, the retina assumes a brilliant reddish appearance, and the retinal vessels, optic nerve, arteria-centralis, yellow spot, choroid, vitreous, crystalline lens, etc. Two methods by which the fundus can distinctly be seen, by the upright and inverted image, or direct and indirect. The appearance of the healthy eye as presented through the medium of the ophthalmoscope has to be understood before morbid phases can be judged. It takes years of hard labor to be able to use this simple but wonderful instrument. Only trained observers understand the powers of the microscope or of the telescope. A novice could see about as much with one instrument as with the other, whether looking at near or distant objects. In the sound eye the retina does not present a uniform color in all cases or races, but the tint varies from pale red, through shades of pale orange and yellow orange to buff. In vigorous persons the retina has a much redder appearance than in the feeble and anaemic and nervous. No pulsation is observed in the retinal vessels of a healthy eye, but in heart trouble it is visible.

The optic nerve presents a variety of appearances in persons who enjoy perfect health. As age advances it becomes smaller. In young persons the vessels of the choroid can scarcely be made out; but in advanced life the retina does not conceal the vessels, and are bright red; but in old age the color is reduced to a brownish tint. No picture or verbal description can convey an accurate idea of the morbid phases of a diseased retina or of the optic nerve or the choroid. Scrofulous and syphilitic taints, kidney and other constitutional derangements work so insidiously that, unless it is discovered early, and proper means taken to abort or remove them, it generally ends in total blindness. In detachment of the retina, atrophy of the nerve, in iritis, diabetes and tumors in the eye, orbit or brain, can be easily diagnosed by one who is a master in the use of the ophthalmoscope. In certain forms of nervous affections, headache, etc., the early investigation is of great value. The ophthalmoscope reveals all this and much more, such as ruptures of the blood vessels, foreign bodies within the eye, and many latent diseases. By the proper use of this truly wonderful instrument, we are able to measure the depth, shape and power of the eye, and positively decide whether the eye is myopic, hyperopic, hemi-

opic, astigmatic or presbyopic. By its use we can decide the density, transparency and condition of the crystalline lens, and thus discover opacities or incipient cataracts, and be the means of saving the sight before the lens becomes entirely opaque. The best of all, by the aid of this instrument only we select the proper spectacles with precision and exactness. We are also able to diagnose any sympathetic or latent troubles in the eye or circulatory system, its origin, and give a true opinion as to the results. This simple but complicated instrument can only be successfully used by the one who has mastered the entire branch of ophthalmology in the hospital clinics, and who devotes his entire practice to the treatment of this divine organ, the eye. The use of complicated instruments in the hands of peripatetic quacks, oculists made in four weeks, or self-styled opticians (spectacle dealers), is of no value to their dupes, but often does much harm and injures the sight. The use of spectacles selected by any other means than by the investigation of the correct neutralization by the ophthalmoscope are dangerous. (See chapter on History of Oculism.)



Disorders of the Nervous System.

NO organ in the human body is so delicate sensitive or useful as the eye; and no organ in the body yields so readily to properly directed treatment or operative interference. By a single stroke of the surgeon's knife the blind are made to see the light of day as clearly as in their youth; the deformed or crossed or squint eyes are straightened, and the weak, nervous eye strengthened. It has of late years become more and more generally understood that certain affections of the eye have a far-reaching effect upon the nervous system, and are one of the most prolific sources of nervous disorders, causing headache, vertigo, nausea, epilepsy, chorea, fainting and roaring in the head. These symptoms are generally present, prominent and varied. This trouble is found not only in the myopic, hypermetropic and astigmatic, but in the normal eye. One of the very first indications we have of an asthenopic (muscular weak) eye is weak, painful, indistinct sight, great difficulty in reading, or taxing the eyes long without tiring them.

Many persons think, because they see clearly, they have perfect vision. This, however, is not always correct. It is not how well you see, but how long you can tax your eyes without producing headache, nervousness, pain in the eye-balls, sick stomach, dizziness, a frequent desire to close tightly the eyelids, the letters or work becoming indistinct, blurs before the eyes, smarting of the eyelids, eyes red and irritated, pain in the temple, eyes tire and ache at night, or specks floating before the eyes.

School children who complain of their work giving them headaches, making them nervous, tired, irritable or with dark circles around the eyes, have imperfect eyesight. All these conditions and many others indicate poor vision, which can always be corrected by properly fitted glasses, ground and adapted to each individual case.

If errors of refraction be due to a diseased condition of the retina, choroid, or some other deep structures of the eye, this will require constitutional treatment, watched and guarded by a skilled oculist-physician. Diseases of the kidneys, heart, blood or general nervous system are frequently detected in their incipency by a careful and systematic early examination of the deep eye structure.

In some types of asthenopia no pain is felt at all, but, after using or taxing the eyes for a while, the work becomes indistinct, or double, so that the patient is compelled to stop using the eyes for a time. Relief is temporarily afforded by rubbing the eyes or looking at some distant object for a time, after which the work can again be resumed. But the trouble soon returns by the same train of symptoms, only exaggerated. If the work is still persisted in, the pain increases, there is photophobia, and a sensation of dazzling and dimness, and the eyes become red and irritated and watery.

As the management of deep-seated optical, nerve, capsular or refractory work belongs to the specialist, we ask respectfully to be consulted in relation to all eye afflictions.

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SPECIAL REQUEST.

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Faithfully yours,

A. B. BARKER, M. D.

CARE OF THE EYE AND EAR.

Do not read or study by a poor light.

Let the illumination come from the side, slightly back, but not from in front.

Do not read or study long at a time while suffering great bodily fatigue or during recovery from illness.

Do not read lying down or on the train.

Do not use the eyes too long at near work, but when weary, give them periods of rest by looking at a distant object every fifteen minutes, and a bath in cool water with friction or massage is also good.

During study, avoid the stooping position or whatever tends to produce congestion in the head and face.

Select books printed on good, but not glazed paper, and well printed.

Take much exercise in the open air. Indoor life ruins more eyes than all the doctors can ever cure. Life at the seaside is favorable to good sight. Outdoor life in a wooded country also favors the eyes. The green grass and green landscape is good for the eyes.

As you value your eyes, so keep your body strong. The eyes weaken as the body weakens.

The eyes are the most precious of our sense organs, and are easily injured, and it takes great skill to correct them; but they may never be as good as before.

Do not use glasses purchased at the jewelry toy stores or even from so-called opticians or spectacle dealers, unless you first obtain a prescription from the Surgeon-Oculist.

Do not use glasses of any kind unless so ordered and adjusted by a competent oculist (eye surgeon).

Do not use any kind of eye waters or eye salves, or any kind of patent or proprietary nostrum.

Don't use any kind of cosmetic or veils, and take no nostrum medicine for headache.

Don't look too long at the keys of the typewriter.

Don't use yellow curtains for windows.

Don't gaze at the electric light.

Severe pain in the ear indicates inflammation. When this occurs, let the patient lie down, and, from a small sponge, drop carefully and directly into the ear, water, as

hot as it can be borne. Do this as often as is necessary to control the pain. Hot and dry flannels applied to the side of the ear is also good. The very best is to drop in the ear Hyd. Cocaine, 4 per cent to the dram of warm water.

Never apply a poultice to the eye or ear.

Never pick your ears with matches, earspoons, hairpins or other objects.

If the ear itches or pains, one drop of Hyd. Cocaine warm, will relieve at once.

If wax accumulates, or foreign bodies get into the ear, raise the ear upward and backward and syringe the ear carefully with warm water.

In many cases no one but the skilled aurist can properly clean the ear.

Never let a discharge from an ear continue; it is not only offensive, but will destroy the hearing and endanger the life.

Never put any oils, laudanum or caustics into the ears.

Do not strike your child on the ear. Protect the ears in the cold draft. Avoid brass ear-rings.

Do not neglect inflamed eyes. Cold or hot water, as may be most agreeable to the patient, is the best application.

Pain, with inflammation of the eyes, indicates danger; in such cases get the following remedy: Dubosia, gr. 1, distilled water, $\frac{1}{2}$ oz., may add one grain of Hyd. Cocaine. Mix and drop in the eye once or three times a day.

When the pupil is fully dilated, cease the remedy and apply to the skilled oculist. Aconite or belladonna, a dose alternately every hour until the oculist is seen.

Avoid all those who claim to treat the eye or ear in connection with their general practice; also avoid the so-called free clinics, or dispensaries, for they only experiment upon those who apply.

Blue, smoked, cobalt blue or gray glasses, are always to be used in preference. Never wear green glasses or goggles of any kind.

When reading, keep a bowl with water and put a large sponge in the water on the table to absorb the chlorific rays from the light.

In purchasing glasses, buy the best, and only purchase

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by the oculist's advice. Avoid spectacle venders, and all who attach the word optician to their business.

Never press your eyes with your fingers. In wiping, press gently on the corner of the nose (inner canthus).

To remove a foreign body from the eye, close the mouth and nose with the fingers, then lift the upper lid gently and take a deep inspiration and force the air to pass through the canals from the nose to the eye, and the force of air will drive it out.

If the body is lodged on the lid, turn the lid and wipe it with a fine rolled piece of paper or cotton. If it is lodged in the eyeball, consult the oculist at once.

A blind and painful eye, or a piece of an eye, if it is tender, red and painful, should be removed by all means, for it will put the other eye out from sympathy.

Never let your child grow up with a cross, weak, or cataract eye; never let your child go without glasses if it is near-sighted. The earlier a cataract or cross-eye is cured, the greater the success.

Keep your mouth shut on coming out of a heated room on a cold night, for the space of ten minutes. By not so doing, many persons sleep in the churchyard who might now be young and happy.

Sucking a piece of borax clears the voice of a singer or speaker which has become husky. A little nitrate of potash is also good.

Avoid peripatetic quack oculists and those claiming to treat sore eyes in connection with their general practice.

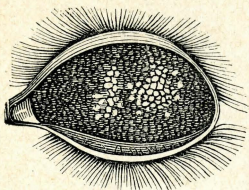
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BEWARE!

Impostors are traveling in different parts of the country, representing themselves to be Dr. Barker or Dr. Barker, Jr., or being in some way connected in business with us. Others copy our engravings, lectures and testimonials. Remember that Dr. A. B. Barker and Dr. A. B. Barker, Jr., are permanently established in Cincinnati, O. Their portraits and signatures will be found in their books, and they will in person treat all patients calling at their office. So beware not to make a mistake in the initials. The names are Dr. A. B. Barker and Dr. A. B. Barker, Jr.

Letters of inquiry promptly answered.

Granulated Sore Eyes.



CHRONIC granular lids is one of the most common eye affections. The inflammation, in the commencement, is very slight; so that persons may be suffering from it and notice only that the eye-lids are a little glued together in the morning, or that

there is a slight feeling of roughness under the eye-lids, as if a foreign body is lodged in the eye. This condition is soon followed by other symptoms, the membrane becomes thickened, swollen and red, with minute pimples or granulations scattered over them—a mattery discharge and a feeling of sand under the lids. If the development of the granulations is not checked, the eye-lid becomes contracted or turned, the outer edges being drawn in and the eye-lashes will sweep or rub over the ball. This condition is often called wild-hairs, from the mistaken idea that the hairs have grown on the inside of the lids. Some so-called eye doctors and venders of patent nostrums have attempted to treat this disease with caustics, blue vitriol, potash, nitrate of silver, etc. Many eyes have been ruined by this erroneous and dangerous treatment. The proper way is to allay the inflammation as quickly as possible by stopping the flow of blood to the inflamed parts. It is a well-known fact that if the flow of blood is stopped, inflammation subsides.

Our treatment for all forms of sore eyes, such as scrofulous ophthalmia, gonorrheal ophthalmia, catarrhal ophthalmia, purulent ophthalmia in infants, etc., is entirely new, and the remedies are mild and soothing, improving the eye from the first application. No confinement in dark rooms or staying in the city for months at great expense and loss of time.

One interview is generally sufficient, after which the treatment can be conducted successfully at home by correspondence. Our fees are within the reach of all.

Caution—All sore eyes are contagious, and great care should be taken to avoid inoculation.

CATARACTS.

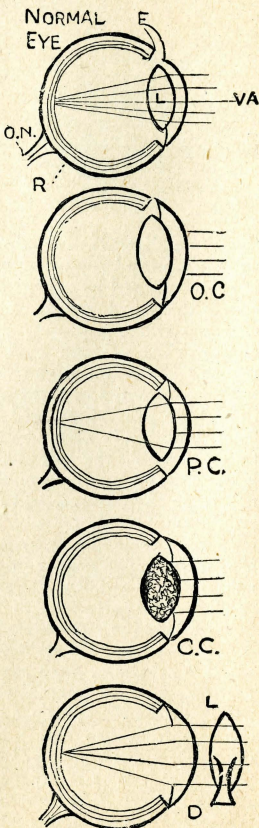


ONE of the grandest achievements of the last century and a half is the cure of cataracts.

This treacherous disease is a common one. Its approach is attended with no pain whatever, stealing upon the unfortunate patient with no definite warning until the sight is gone. At first, one eye is usually affected (often unawares), the other, from sympathy, will eventually also become blind.

Causes of Cataract : Faulty nutrition, injuries, sore eyes improperly treated, the non-use or wrong use of glasses, syphilis, kidney, rheumatism, neuralgia and other constitutional troubles may produce cataract. Many are born with cataract.

There are several varieties of cataracts, designated as hard, soft, lenticular, capsular, polar, zonular, senile and congenital. Most persons suffering from cataracts can



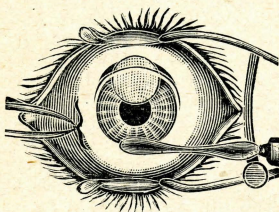
The accompanying engravings: Fig. 1—E represents the normal eye, showing how the rays of light are focussed on Retina, R. O N., Optic Nerve; L, the Lens; V A, Axis of Vision. Fig. 2—The rays are obstructed by an opacity on the Cornea. Fig. 3—Incipient Cataract. Fig. 4—The eye is entirely blind from Cataract; rays cannot pass to the Retina. Fig. 5—The Cataract Lens is removed, so the light can enter, and an artificial lens made of glass of the exact concavity or convexity (L or D), properly adjusted to Axis of Vision, fitted in a spectacle frame, and the rays of light made to focus on the Retina, as in a perfect normal eye.

see better in cloudy days or twilight, when the eye is shaded and the pupil becomes dilated, allowing some ray of light to pass into the eye around the margin of the opaque lens. There are medicines that will dilate the pupil temporarily, and thereby improve the sight while the effect continues; but no medicine can clear up a lens that has once become opaque. A cataract is an opacity of the crystalline lens L, situated back of the iris, enveloped in a capsule in the interior of the globe of the eye (Fig. C C). Cataracts are never formed on the external portion of the eye, as most people suppose, and, in fact, as many doctors suppose. The opaque "spots" and "films" on the cornea, which also shut out the light, that are, by the ignorant, called cataracts, are not such; but are usually albugo or leucoma of the cornea (Fig. O C). Attention is particularly called to this distinction, for the reason that they are so often confounded, even by doctors who profess to know all about the eye, and frequently go so far, in their ignorance, as to attempt to cure the disease by some eye water or salves, or worse still, or to "scrape off" or venture to remove, with knife, a certain appearance of outside growth—some opacity on the cornea (Fig. O C). If a physician cannot distinguish between an opaque lens (CC) and opaque cornea (O C), he should not assume the responsibility of treating, but send his patient to an oculist for an operation. If any practitioner entertains the preposterous notion that cataract is a film growing over the sight (cornea), let him, at once, post himself in regard to the anatomical divisions of the eye. A case of cataract never gets well without an operation—whoever says otherwise either knows little or nothing of the subject, or may wish to swindle you out of your money by some base quackery. The nature of the cure depends upon the stage of its progress. If cataract is taken in its incipient state, it can be arrested in its growth by our mild and improved medication. Children who are born with cataract should be operated upon before dentition, as the lens is then in a fluid state and is soft, but hardens with age. If a child thus afflicted is taken to a general physician, he may say, "Let it alone; the child will outgrow it." But the Royal London Ophthalmic Hospital, in London, England, in a late report, calls the special attention of the public to the necessity of bringing children with cataract and cross-eyes

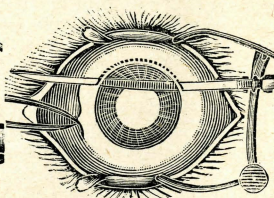
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for operation at an early period, instead of allowing their eyes to be damaged by delay.

Cataract is a common disease, and heretofore countless thousands were destined to a continued life of blindness. The disease consists of an opacity or cloudiness of the lens (L) or its capsule (see Figs. 1 and 4, p. 66), a body somewhat larger than a pea, and located between the center and front of the eye-ball. This lens (which is envel-



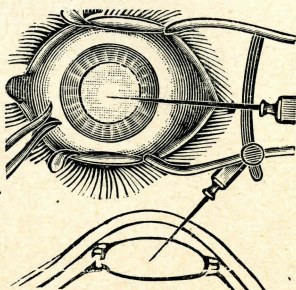
Expulsion of the Cataract.



Linear Cataract Operation.

oped in a capsule of the same transparency), when in a normal condition, is perfectly transparent, its office being to collect the rays of light and focus them upon the retina (R O N), thus producing clear and distinct vision, and to restore this lens to its normal condition requires large experience, a steady and skillful hand, and a thorough knowledge of the eye in every particular.

Cataracts obscure the sight because the crystalline lens is permanently beclouded, and the rays of light, so necessary to vision, are obstructed in their passage to the retina (R, Fig. C C). Hence an operation for cataract involves the dissolving with a needle, or extracting with a knife, of this useless opaque lens, and the



Needle Operation.

substitution of an artificial lens of glass (Fig. 5, D or L).

properly ground, adjusted to the sight and fitted in spectacle frames. In our long practice we have removed numerous cataracts, and have in no instance failed to restore the sight. We invite the afflicted to consult us. See record of cases.

SKETCH OF A. B. BARKER, M. D.

IVERY age has produced its typical men. Every country has had such, and has profited thereby. The type men stand higher than the multitude; they are to the masses what the composite photograph is to the many faces that give it character. The birthplace of a man is perhaps less important than is usually supposed in biography. The particular spot where the man begins his career is hardly resgesta of the case. He may be born here or there; the circumstance has interest, but is by no means essential to the understanding of the given career. It is not the locality, but the descent which determines the initial, and, to a large degree, the future powers of the life in question—that is to say, that we need not greatly concern ourselves to know that Washington began in Westmoreland or some other county, that Lincoln was out of Larue or Hardin, that Grant began at Point Pleasant or in some hamlet or cabin away back from the river. Now, the less the reader seeks to know the initial point, and fixes his attention upon it as the meritorious spot from which some form of greatness has sprung, the better will he be able to appreciate excellence or real benefactors. Further, the connection between a man and his birthplace—between the interest of the one and the importance of the other—has been somewhat reversed in history. It has not been the spot of birth that has made great the man, but the man that has made great the spot of his birth. Not Corsica made Napoleon; not Boston, Franklin. It was “The Child of the Republic” who made famous forever the island of his birth; and Ben. Franklin, though the son of a candle-maker, sent back the glory achieved in the French capital, to the city of his nativity—sent back and furnished to Boston the radiance of his fame.

Dr. Albert B. Barker, the subject of this sketch, comes from clerical ancestry and of Anglo-German parentage. He was born in the city of Kowno, Europe, on the 10th of

April, 1847. He passed his early youth in Kowno, and received there a thorough literary and scientific education, and, after graduating, he turned his attention to the study of medicine. Having received his degree from one of the best medical colleges in Europe, he continued his studies under the direction of, and becoming a co-worker with, that most eminent physician and surgeon Doctor Emanuel Sapira, attending, with him, various hospitals and clinics in the noted medical centers of the old world. Being of steady nerve, an expert manipulator, equally skillful with his left as with his right hand, Dr. Barker was assigned the nice operations of Enucleation, removing of cataracts, the correcting of strabismus, and the treatment required for all injuries, diseases and malformations of the eye, together with those of the ear, nose and throat. His wonderful success in curing these afflictions induced him to make a specialty of this branch of his profession, and to acquaint himself with every modern and recent discovery. The doctor left his native land for America in 1870. Arriving in New York, he matriculated and attended two full terms at "The New York Eye and Ear Infirmary," under Dr. H. D. Noyes and associates; also attended the New York Poly-Clinics," under Drs. David Webster and E. Grewning; he also made frequent visits to the Bellevue and Manhattan Hospitals. Among other diplomas, he received the degree of M. D. from "The Eclectic Medical College of New York City," then under Dean Prof. George C. Boskowitz. After practicing in New York, the doctor visited Ohio, bought property, and settled in Cincinnati, where he soon enjoyed a large and profitable practice.

Although having his office and residence in Cincinnati, the doctor has had an extensive patronage from the neighboring state of Kentucky. He wrought cures there that seemed almost miraculous—causing, in some instances, good sight to many born with sight obscured, restoring vision to others afflicted with supposed incurable cataract, and in straightening innumerable cases of cross eye. During the administration of Gov. McRary, Dr. Barker was urgently solicited to establish and manage, at Frankfort, a State Infirmary, especially for the treatment of troubles of the eye, ear, nose and throat. Among other representative men who favored that movement might be mentioned

Judges P. U. Major, G. C. Drane, S. F. Trabue, Alvin Duvall, Pryor Lindsey, J. P. Pryor and J. W. Chinn.

Kentucky has contributed largely to Dr. Barker's practice. In Lexington, as well as in Frankfort, there are many who bear testimony of his gentlemanly deportment, professional honesty, skill, and of his phenomenal success. The doctor estimates that he has cured thousands of cases in that State, cases so complicated that they were pronounced by the best physicians as beyond the assistance of medical or surgical treatment.

So firmly were the people of Lexington impressed with the doctor's zeal and devotion to his calling, with his real ability and usefulness, that the Chamber of Commerce, to induce him to settle in Lexington, offered to construct, at a cost of not less than fifteen thousand dollars, a handsome and suitable building for his exclusive use. But the doctor's business and professional relations in Cincinnati, where he had already purchased a beautiful home in which himself and family felt themselves permanently fixed, no doubt caused him to reluctantly forego the acceptance of the generous and appreciated proposition of the citizens of Lexington, expressed as follows:

LEXINGTON, Ky., November 15, 1881.

DR. A. B. BARKER: We, the undersigned, citizens of Lexington, learning that you are thinking of leaving our city for a larger field of usefulness, and feeling that this would be a great loss to our community, in which as oculist you have so long and successfully contributed not alone to the suffering and afflicted, but also to the general welfare of our city, we would respectfully request you to change your mind and remain with us. In the hope our petition may not be too late, we are,

Very Respectfully,

Isaac Hutchinson, Wholesale and Retail Grocery; Dr. M. P. Robinson; D. T. Ambrose, Real Estate Agent; Wm. Patrick, Merchant; Louis Strause, Merchant; Gus Strause, Merchant; S. G. Sharp, Attorney; G. W. Norton, Druggist; J. B. Wilgus, Ex. Bank; Michael Dougherty; B. P. Bosworth, Merchant; John Boyd, Harness Manufacturer; W. A. Lilly, Merchant; J. R. Shed, Harness Manufacturer; G. D. Wilson, Livery Stable; Dr. C. C. Sharp; L. Heacox, Merchant; John McMurty, Architect; W. S. Rule, Lumber Dealer; G. W. Wainscott, Livery and Board-

THE EYE—HOW TO PRESERVE IT,

ing Stables; M. Kaufman, Councilman; S. L. Shivel, Insurance Agent; M. G. Thompson, Merchant; J. W. Cannon, Merchant; Dr. J. C. Harpham; J. W. Johnson, Merchant; H. A. Bowne, Merchant; Milward & Co., Furniture Manufacturers; Thomas Sutton, Merchant; Rice Levi, Merchant; R. S. Bullock, Cashier Fayette National Bank; T. J. Danahy, Councilman; T. W. Lancaster & Co., Singer Manufacturing Co.; S. P. Gross, Merchant; J. M. Hocker, Merchant; J. C. Berryman, Merchant; Dr. David Bell; E. E. Eagle, Merchant; J. W. Cochran, Insurance Agent; A. J. Sheddell, Merchant; R. J. Reid, Merchant; D. S. Randall, Merchant; A. M. Swope, Maj. B. G. Thomas and Thos. Bradley.

In reply to above petition, handed him and signed so numerous by many friends and citizens, requesting him to abandon his intention to locate in Cincinnati, he said: "I have the honor to say I am deeply grateful for the kind sentiments as expressed in said petition, and that I duly appreciate the expression of your confidence and kind feeling toward me. I have, however, made all arrangements, and have purchased a residence at 677 West Fourth Street, Cincinnati, where my future office will be, and I cannot now reconsider the step I have taken. If anything could induce me to leave here, your earnest request, so kindly made, would be sufficient. In Cincinnati a larger field will be open to me, and, while I cannot accede, I shall never forget my friends in Kentucky. Respectfully,

A. B. BARKER, M. D.

Oculist-Aurist, Cincinnati, O.

* Dr. Barker is now preparing a new treatise on the ear, nose, and throat, their troubles, their causes, their care, and their treatment. A free copy of which will be sent to any afflicted person by writing to the Doctor.

ARTIFICIAL EYES.

If from injury, disease or other cause one of the eyes is put out, its place can be supplied by an artificial eye—one so perfectly resembling the natural mate that the closest observer can not help being deceived by it.

Artificial eyes are not the result of recent invention; thousands of years ago the Romans and Venetians used them, and, now and then, one is found in the head of an Egyptian mummy. In those remote ages artificial eyes were made of enamelled gold, silver, ivory and other precious material; they were solid, round and expensive, and only attainable by persons of great wealth. Patriotic citizens have carried them to the public treasury as an offering in time of war or general distress. But the invention of porcelain in the sixteenth century and the use of glass, have greatly reduced the price. Their shape, nowadays, unlike those furnished by the ancients, are made of a half shell-like formation, and, in their construction, a remarkable nicety has been attained. So perfect is the imitation of the natural organ become, that cases are recorded where one or the other of married couples has had an artificial eye unknown to the respective sharer of his or her domestic joys and sorrows through years of matrimonial union.

An artificial eye, if properly inserted, not only covers up disfigurement, but it strengthens the unimpaired organ by acting as a screen and preventing irritation from the wind and dust of the maimed eye, with which the healthy eye is in direct sympathy. It keeps the face and the muscles of the lids from shrinking, the eye-lids from turning in or growing together, the lachrymal tubes leading from the eyes to the nose from becoming obstructed. It supports the lids, and sympathetic inflammation is avoided. One would be surprised to learn of the large number of people who wear these helps to appearance. There are over 70,000 persons wearing artificial eyes in the United States in consequence of losing an eye from injury or abuse. A well made and skillfully fitted eye will last for twenty years. The idea that the introduction of such a foreign body as an artificial eye into the ocular cavity must necessarily be painful, is incorrect. The extreme sensitiveness of the living eye is limited to the transparent cornea or the colored part of the eye, and, as this mem-

THE EYE—HOW TO PRESERVE IT,

brane is almost always destroyed, at the same time, the ball becoming disorganized, the entire sensitiveness disappears with it, and an artistically fitted artificial eye causes no pain or inconvenience in any way or form. No one but a professional and practical oculist should be entrusted to select and fit an artificial eye, select and fit spectacles for the natural eye, or intermeddle, in any manner, in the treatment of the ocular cavity or in prescribing for the aid and preservation of sight.

Dr. Barker keeps a large collection of artificial eyes on hand, of all colors and shades, and can imitate any eye in a few minutes, having movement corresponding with the natural eye, so that a difference can not be distinguished between the two naturally looking eyes.

An artificial eye can be forwarded by post or express, by those who are unable to visit the doctor at his office, by answering and forwarding the replies to him of the following questions:

1st. Is the eye required for the right or left side?

2d. Is the ball of the injured eye entirely lost, or partly wasted, or still left the full size?

3d. What is the color of the sound eye—exact color?

If these questions are answered clearly, an eye will be sent with full instructions as how to insert it, and if the first eye is not correct it will be exchanged for others until perfect. The doctor has the finest and largest stock of artificial eyes in the United States.

Special rates to physicians ordering eyes for patients. See the eye engravings.



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“DO UNTO OTHERS AS YOU WOULD HAVE OTHERS DO UNTO YOU.” We take the liberty of sending to you this book, with the assurance that you will receive great benefit by its careful study, and, when through, you will kindly hand it or send it to your friends, and especially to those who are afflicted. We feel confident that you will gladly comply with this small request, or send us the name and post-office address, and we will mail to them a copy, free. By so doing, you will not only act the part of the philanthropist, but place the author of this book under a lasting obligation to you.



Dr. Barker's office is in this building, N. W. Corner Sixth
and Vine Streets. His hours are from 9 a. m.
to 12 m., and from 2 to 4 p. m.
Sundays, 9 to 12 m.



IN
PRACTICE OVER A
QUARTER OF A
CENTURY

THE CENTURY